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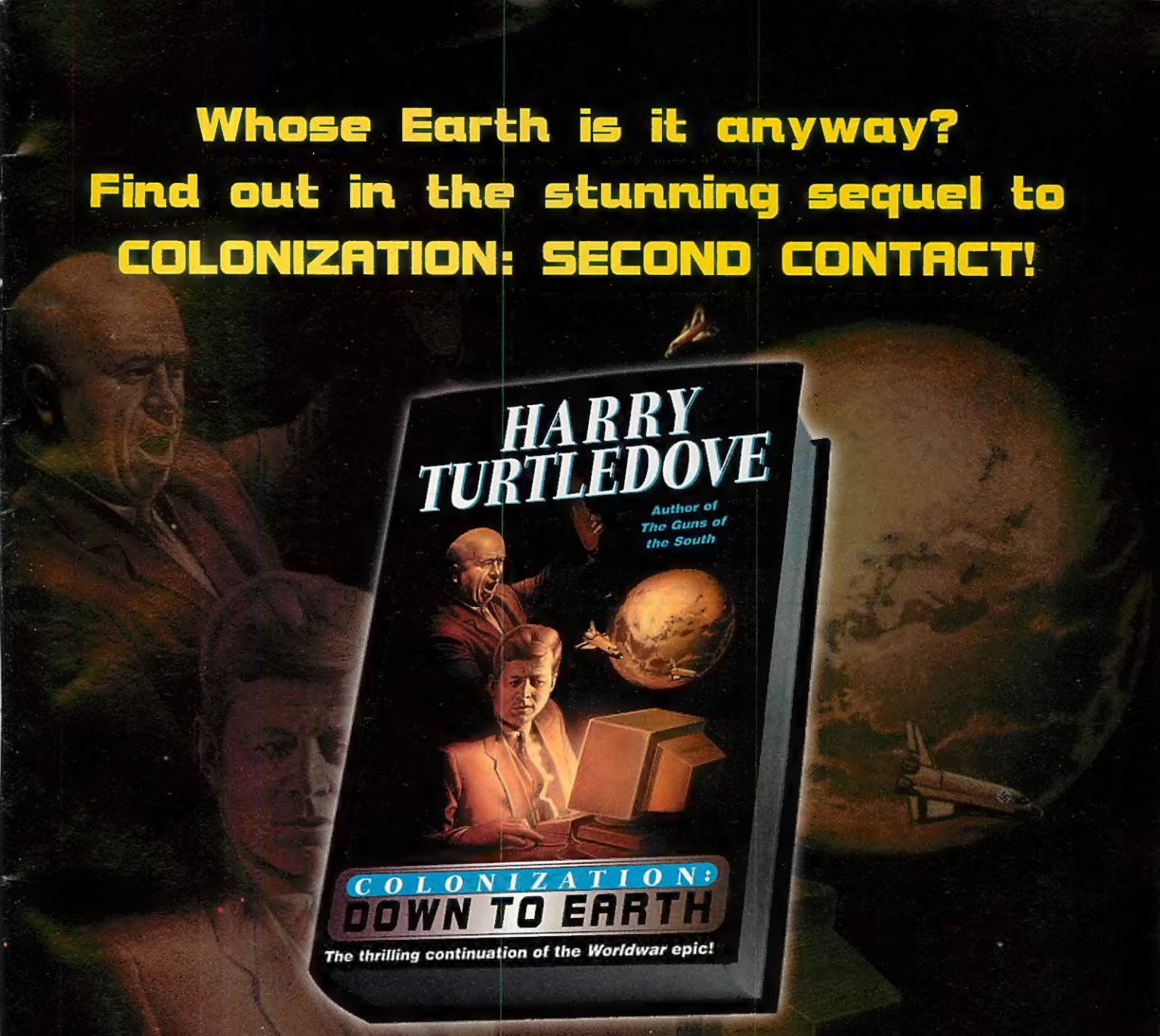

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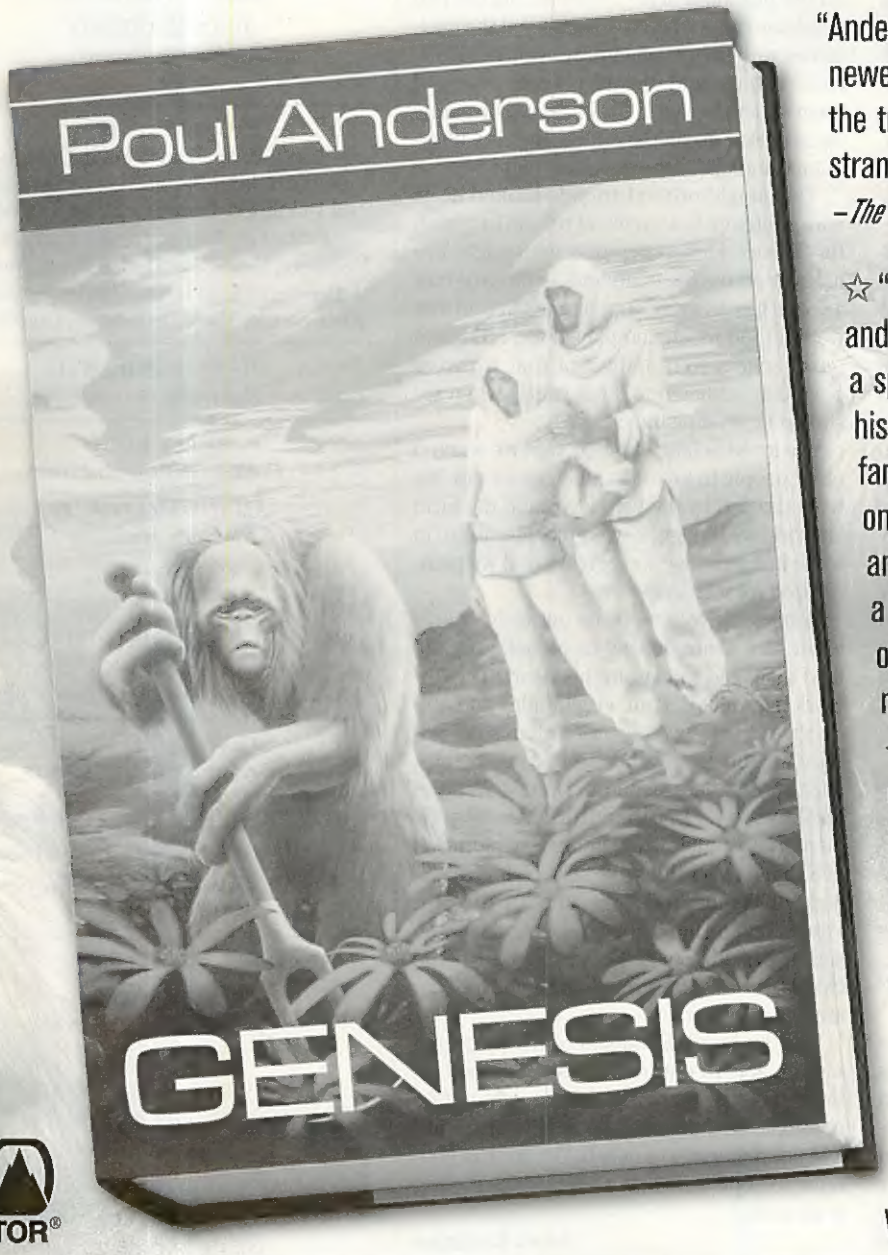

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–Publishers Weekly, starred review on *Harvest of Stars*

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Looking back to and forward from the *Science Fiction of the 20th Century*.

THEY SAY THAT THERE CAN BE NO SUCH thing as a time machine, that it is but a fanciful dream. But they are wrong. I have seen one with my own eyes, and am here to say: It exists. Scientists have long wished for a glimpse of creation, a snapshot of the Big Bang, and while that is still out of reach, I have seen something better: the raw and nascent face of Science Fiction.

Oddly enough, this time machine, rather than being suitable only for the sons of Midas, is happily within reach of most of us. The pilot for our journey is noted SF author, editor, and pulp historian Frank M. Robinson, and the name of his lovingly-built vessel is *Science Fiction of the 20th Century: An Illustrated History*. The shipbuilder is Collectors Press of Portland, Oregon, and the cost of a ticket to this remarkable full-color, hardcover, profusely illustrated journey is a mere $59.95. But the visions you'll see along the way are beyond price.

Drawing on Robinson's vast personal collection, we are shown the covers of magazines from the early days of SF (and oh yes, books and movie posters as well) accompanied by a warm and personal narrative text, rich with historical anecdotes. I focus on the magazines here because once (and here the editor heaves an echoing sigh), the magazines were king. No SF books existed, and the Sci-Fi films that came along to steal our thunder had not yet been born. Whatever groundbreaking, envelope-pushing, or genre-reinventing went on was done in the magazines. This was where you came for sense of wonder.

If you went to the first small SF cons of the day, what you heard were not descriptions of the latest episodes of a TV show or how to best manipulate a PC joystick to beat a videogame, but rather discussions of the contents of the latest issue of *Amazing* or *Astounding* or even *Super Science Stories*.

Forgive me for getting misty-eyed for a moment. In an age like today when the fiction magazines are hanging onto life by the barest thread (and if more readers don't begin to support them, that thread might snap) it is bittersweet to look back to a time when the SF magazines were the top dogs.

And what magazines they were! A glimpse through the pages of our time machine tells us that we will not see their like again. (In the interests of full disclosure, I should mention that, not only does the volume contain color reproductions of both the November 1992 and September 1998 cover of *Science Fiction Age*, but Robinson manages to use the word "shrewdly" in the same sentence as the words "Scott Edelman," a task that isn't often done. But trust me—I would be painting the book as a masterpiece even without that inclusion.)

I'll let Robinson himself explain some of the impetus behind *Science Fiction of the 20th Century*:

"When we discovered Science Fiction, we were consumed by it. We haunted the library for books by Verne and Wells and read and re-read the cheap Grossett & Dunlap editions of Edgar Rice Burroughs that we were given for our birthdays or at Christmas. But the real epiphany came when we discovered the magazines with their fascinating covers of aliens, rocket ships, and distant planets. We read them under the tree in the backyard on sunny days, curled up on the couch on rainy afternoons, and under the covers at night.

"Our neighborhood friends looked at us with contempt (an excellent reason to search for Science Fiction pen pals who might live halfway across the continent—or maybe half a dozen blocks away), our parents fretted that we read too much and played too little, and our teachers were indignant that we were obviously addicted to "that trash" when we should be reading the classics.

"We loved Science Fiction, and we wanted other people to love it as much as we did. We were dazzled by the wild ideas and the lurid artwork, we thought it was great literature (in some instances we were right), and we proselytized for it shamelessly."

Robinson's volume turns out to be a love letter to a genre, letting us all see how the field managed to capture his heart. The artwork by Frank R. Paul, Virgil Finlay and others gives a truly awe-inspiring glimpse of Science Fiction discovering itself, cover bylines such as Edmond Hamilton, Donald Wandrei and Edward E. "Doc" Smith bring back happy memories of my own childhood exploration of SF, and cover titles like "The Golden Amazons of Venus" and "Wreckers of the Star Patrol" remind us all not to take ourselves too seriously. Additionally, Robinson's tales of the twin histories of the growth of SF and fandom are without peer.

Will the Frank Robinson of the next century be able to put together such a book on the eve of 2100? I worry that it might not be possible. As the year 2000 begins, there are just not that many of us left. But we can continue to hope. Isn't that what Science Fiction is all about?

Scott Edelman

SCIENCE FICTION AGE

VOLUME 8 NUMBER 3

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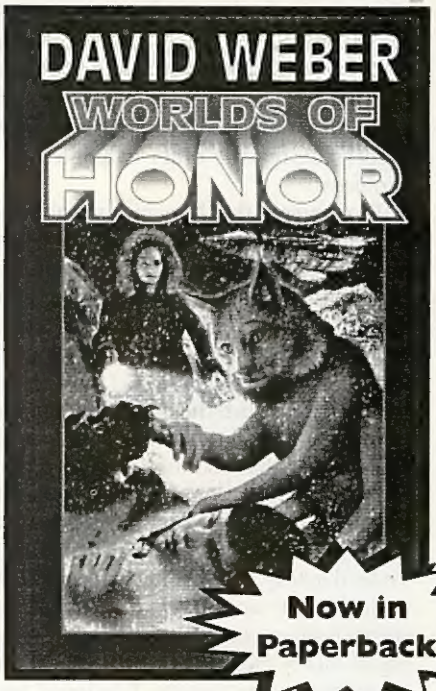

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Dear Scott:

Thank you so much for the November issue. When I saw that two of my favorite authors, Paul Di Filippo and Rudy Rucker, had collaborated on a story, I was delighted by the possibilities. They didn't disappoint.

"The Square Root of Pythagoras" is enchanting, funny, and deeply weird. "Mathematical SF," I guess you'd call it. "Apothecary Blue" is another strange one, not as good as Reed's usual offerings, but still satisfying. And no matter where readers stand on the War on Drugs, "Bitter Pills" should leave them feeling a bit unsettled. It's just deadly. "Plain Female" and "Primordial Chili" were also solid. What a great issue. The only thing missing was a Chris Mars painting!

Jonathon Sullivan

Dear Scott Edelman:

I'd like to respond to Steve Bellin's letter published in the January 2000 issue of *Science Fiction Age*. He refers to the use of illegible text and cites three examples from the November '99 issue. Of the three, only the last one (page 53) I would agree to be somewhat "difficult." But really, what choices are there to improve the text? White would *have* to be the color. Nothing else would work. Perhaps a Verdana font and a larger font size would help. I would give him that one. Otherwise, the idea of superimposing type over graphics, which I presume is the Art Director's responsibility, is strictly for visual splash, to make things colorful and pleasant. Page 53 may not have been so successful, but the other examples were harmless.

His comment that "graphics should work with, not against the text...." is absolutely true. But I don't know what you could have done with page 53 ... inform the graphic artist that orange isn't an appropriate background color and he should change it to accommodate text? I bet THAT would work.

Finally, and this is the point that prompted me to write this letter, Steve mentions the glossy paper that you use for most of your magazine. I wrote you previously regarding the cheaper(?), duller paper you use for each month's novella, asking why you had to resort to this duplicity. Another reader (Pete Blackwell, Mar. '99) wrote a letter in a somewhat similar fashion, complaining about the glossy nature and requesting that *all* pages should be of the duller variety. I enjoyed your response and, funny enough, realized that, yes, the glossy nature does make reading a bit of a chore, with having to adjust the lighting to eliminate glare. In my defense, I was not suggesting that you gloss up the novella in order to make the magazine uniform in nature. I was just curious as to why you chose a cheaper paper for the novellas. After reading your response (Mar. '99) I have to agree with Pete Blackwell and now Steve Bellin that it would be better for the actual reading if the entire magazine was published in the dull paper. But then, that would eliminate all the color graphics, wouldn't it? And we all know that in order to grab people's attention, you have to pump up the visuals.

Oh well, you probably have it right with the present format. I can put up with the glossy pages if it means getting some entertaining graphics mixed with the great text. It's all a question of balance. Carry on.

Reid Babbitt

Dear Scott Edelman:

You're right—picking the best out of the stories from last year is tough. I never did get the November issue, so I guess that skews my answers somewhat. Part of my choices were based in part on if I remembered the story or not. If the title didn't ring a bell, then it means it didn't really resonate with me. (I think that may be some sort of pun....) By the way, I find it very interesting that only four (five—Robin?) of all the stories published in the last year are by women—and two of those four are by the same woman! I thought Sci-Fi had opened up to women! Is there some sort of gender bias at work here?

Debbie Savannah George

The Robin you refer to—Robin Scott Wilson—is male, and has been publishing SF far too infrequently since his first sale in 1970. As for a gender bias at work, I certainly hope not, but a sad reality of my slush pile is that the women there are also outnumbered by about 6-to-1. A process of self-selection is at work, one that cannot be overcome by editors—except by assuring all writers that their stories are judged fairly.

Dear *Science Fiction Age*:

Knowing of Melissa J. Perenson's exceptional writing talents, I was just as impressed, if not more so, with her latest literary piece, "At the start of the 7th season, the men behind *The X-Files* look to the past and future" [November '99]. But at the same time, I did get this very strange feeling of being here before!

Because while Frank Spotnitz is very proud of his association with *X*-creator Chris Carter and company, he also must realize—unless he's just serving up the usual side order dish of disinformation—that the 7th season of *The X-Files* I am currently enjoying will be the end. Because to continue on with the quest, especially when there are no longer any more conspiracy theories, UFOs, alien abductions, and paranormal activity to uncover—unless there's still the secret of Colonel Sanders' seven herbs and spices?—is not only trying to maintain a hold on *The X-Files'* glory days, but overall is trying to milk a dry cow. In all, *The X-Files* rightly deserves to exit at the end of the 7th season with its spirit complete and a five-star salute.

Finally, I would really appreciate it if one of your talented writers could do a feature interview with the lovely and talented actress Gillian Anderson—whose lovely photo will then be gracing the front cover of the particular issue.

Al Munro

Dear Scott:

Way back in November '92 I was scanning the magazine racks for something of quality when my eyes fell upon a gem hidden among the pebbles on the literary beachhead.

Of course, I am referring to issue #1, with its distinctive Asimov-style robot adorning the cover. I was immediately a lifetime fan. I can still recall being worried that it would not be around long, as many other SF magazines were fated. Happily, a flash in the pan you are not. Looking back through all the past issues, it is clear that *SF Age* has lived up to its commitment as a vehicle for the cutting edge of what was once a sadly ignored medium. I do, however, want to share a critique with you. I have noticed a a trend in cover art leaning to what can only be generously described as pop art. If I wanted to see TV or movie characters I would turn on my TV or go to a movie house. I understand the needs of increased circulation and ad revenue, but I for one always found the cover art thoughtful and dramatic in the past. Lately however....

Bernie Winstanley

Once more we end the column with two contradictory desires. If the customer is always right, what is a poor editor to do?

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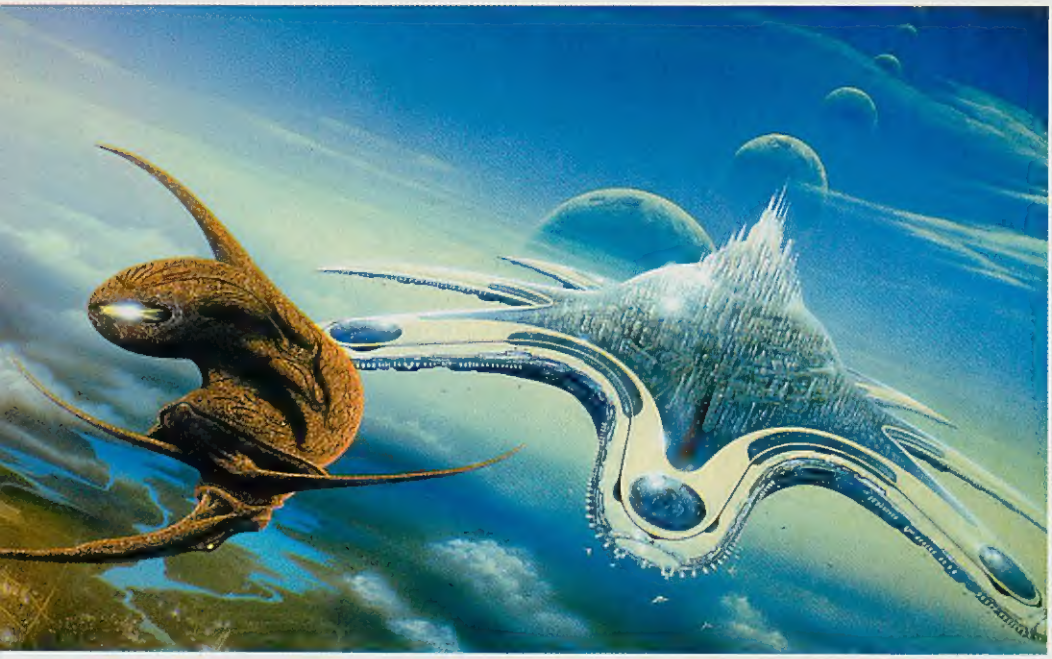
By Paul Di Filippo, D. Douglas Fratz, and James Lowder

The virtues of Hard SF are alive and well with Anderson, Hamilton, and Steele.



ABOVE: Peter F. Hamilton's The Naked God *delivers a healthy dose of good old-fashioned sense of wonder. Art by Jim Burns.*

ONE HANDY FEATURE OF JARGON IS ITS COMpactness. Specialized terms are able to imply to the initiate, in shorthand fashion, vast areas of complexity. Science Fiction criticism is loaded with such potent words. Thus, to say a book is "Phildickian," for instance, opens up huge vistas of genre writing of a certain type.

So when I say that Poul Anderson's new, apparently stand-alone novel, *Genesis* (Tor, hardcover, 256 pages, $23.95, ISBN 0-312-86707-7) is "Stapledonian," I am hauling in a whole raft of associations I assume are vivid to you. To summarize, though: We expect work tagged with this adjective to be cosmic in scope, both across time and space; somewhat cold in affect; and driven more by philosophical concerns than by issues of character.

Well, Anderson's book wears these borrowed clothes pretty comfortably, although there's a little chafing at the neck and cuffs as certain of Anderson's other, non-Stapledonian story-telling impulses protrude, causing a bit of strain at the seams. On the whole, though, Anderson inhabits this famous SF version of a Saville Row suit with dignity and pride.

Although Anderson's novel bears a title indicative of beginnings, we quickly sense that his story will be more concerned with endtimes (the first clue lies on the copyright page, which tells us that part of this novel appeared in an anthology entitled *Far Futures*). The book opens with a scene that blends the urges of antiquity with the demands of the near future: a child gazing up at the stars and pondering the nature of the universe, while contemplating careers in space. This archetypical image holds the real seed of SF's motive power, its famed sense of wonder, and is perhaps meant to echo the start of Stapledon's *Star Maker* (1937), which features a similar encounter between man and universe. Living up to such a deep philosophical passage, embodying and explicating this human sense of awe and bewilderment, in a story of only some two hundred pages, is an almost impossible task for any writer. And although Anderson does his damnedest, with all the skill and grace he's cultivated in over 50 years of writing SF, *Genesis* only partially fulfills its promise.

We quickly learn that the curious child is one Christian Brannock, and we next see him as an adult operating telefactoring equipment on Mercury. Brannock's bond with his remote probe, almost sentient itself, highlights Anderson's thematic concern with artificial intelligence, and the way our creations will evolve as mankind's "mind children." We are told that Brannock will eventually upload his intelligence to cybernetic form, and travel to the stars. Then the curtain falls, rising again a couple of centuries further on.

This portion of the book introduces the second major character, Laurinda Ashcroft, a government administrator intent on protecting Earth from environmental degradation by establishing an artificial world mind which will monitor conditions and protect humanity. (Complete with all the pluses and minuses detailed in Jack Williamson's *The Humanoids* [1949].) Eventually succeeding in her goal against determined opposition, Laurinda, too, also consents to become an upload in her own creation.

The next narrative jump encompasses 1,700 years. Earth is host to a kind of Jack-Vancian culture (there's that jargon again!), whose tame citizens try to rebel, only to be slapped down by the global Big Brother. Actually, Big Mama, since Earth's hidden protector has assumed the role and moniker of Gaia.

An update on the doings of Brannock, and another glimpse of a far-future culture concludes Part One of the novel. Part Two leaps millions of years ahead. Planetary intelligences like Gaia have evolved and permeated space, forming a "galactic brain." (The "Powers of the High Beyond" in Vernor Vince's *A Fire Upon the Deep* [1992] seem the closest fictional kin to Anderson's godlike intelligences.) But light-speed limitations ensure that this farflung brain will continue to have separate parts with separate personalities.

One section of this massive intelligence notes that sister Gaia has been acting strangely. With Sol due to expand into a red giant, Earth faces incineration. Yet Gaia refuses to allow the ancestral globe to be moved to safety. In an effort to solve this riddle, both Brannock and Ashcroft

Continued on page 80

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By Geoffrey A. Landis

Science Fiction's biggest brains predict millennial futures light and dark.

ABOVE: Will the next millennium bring men back to the Moon? (Art by Bob Eggleton.) RIGHT: Or does the future instead see cyborgs gone bad?

FROM THE BOOK OF REVELATIONS TO NOSTRADAMUS to Edgar Cayce, every age has its predictions. As the great calender odometer turns over to the year of the triple 0, marking a major milestone on our unmapped road into the future, what can we foresee for the *next* thousand years?

Science Fiction writers have been hailed as prophets, and certainly they have had their great hits, from Jules Verne predicting the submarine, Hugo Gernsback predicting radar and microwave ovens, and Robert Heinlein predicting waterbeds, waldos, and nuclear power. And we've had our misses—we may not have had people rioting to get their ration of Soylent Green in 1999 (fortunately) but, alas, we're unlikely to have a moonbase and flights to Jupiter by 2001, either.

Science Fiction Age set Science Forum regular Geoffrey Landis to asking the greatest prophets we know of, the intrepid scientists and Science Fiction writers who have participated in our ongoing Science Forum discussions since October 1992, to look into their clouded crystal balls and tell us what milestones to expect in the next millennium. From Hugo-winning Hard-SF writer Larry Niven to artificial-intelligence guru Marvin Minsky, who could be better than the Science Fiction writing scientists to see ahead for us?

Some predict apocalyptic futures:

LARRY NIVEN: Mecca will not survive the next quarter-century. Weapons have become too powerful and too available, and Muslims have become too good at pissing people off.

KEN JENKS: In the next thousand years the world will not end, but you, I, everyone and everything we know will be gone and all but forgotten. Only data and a few artifacts will survive. Worldwide, pollution will get worse before it gets better. A large-scale biotechnology industrial accident will cause widespread fear and minor damage. Nuclear terrorists will strike a major soft target, killing thousands. A medium-sized meteorite will kill thousands. Wars will decrease in duration and frequency, but increase in intensity.

Others see little new:

GREGORY BENNETT: I predict that the turn of the millennium will be the greatest nonevent in recorded history.

LAWRENCE WATT EVANS: Civilization will not collapse. On average, despite occasional short-term setbacks or local catastrophes, the everyday life of the average human being will get a little better with every passing decade.

KEN JENKS: The rich will get richer. The poor will get richer, too, but not as fast.

And yet others see both apocalypses and possibilities:

DAVID BRIN: I promise you, we *won't* see the future that's depicted most often in recent Science Fiction novels and films—a cyberpunk-*Blade Runner* world of ultra high technology combined with angry slums and vast disparities of wealth. Such a world would self-destruct in no time. Weapons and other means of wreaking great harm are being "democratized"—brought within reach of ever-smaller groups of people—so that rogue nations and even lone crazies can do damage out of all proportion. Imagine a Timothy McVeigh who is armed with a chemsyth gene splicer in his basement!

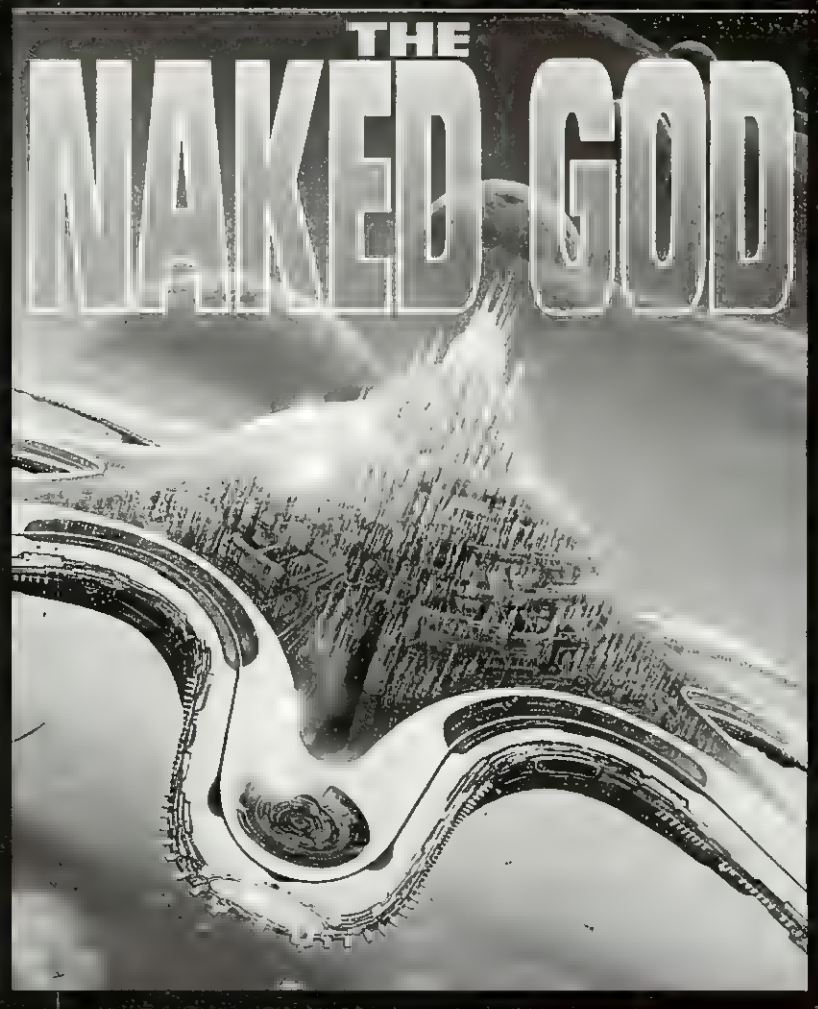
High tech has to be accompanied by advances in justice and general sanity, or we're doomed. Fortunately (and contrary to popular opinion) we've already made great progress in both of these areas. Despite images on the news—and our century's reputation for violence—three-quarters of the people alive today, worldwide, have no personal experience of war, starvation, or major civil strife. That fraction is unprecedented. It suggests we've

"The depth and clarity of the future Hamilton envisions is as complex and involving as they come."

—*Publishers Weekly* (starred review)

THE EPIC FINALE TO THE REALITY DYSFUNCTION AND THE NEUTRONIUM ALCHEMIST

PETER F. HAMILTON



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made some progress, and have a real chance to turn a corner.

Still, things may look really bad before we're out of the woods. The momentum toward environmental decline is already harsh. We've been soul-searching and analyzing ourselves for a hundred years, yet there's still no generally accepted model of human sanity. Only now, after a century dominated by soldiers and lawyers, have innovative methods for dispute resolution begun to emerge, using new techniques to give both sides in a conflict what they need (instead of what they want). If we fail to solve these problems, the result won't be a *Blade Runner* world. It will be a cinder where Earth used to be.

Indeed, this may explain why there's been no verified sign of extraterrestrial life. Maybe no one out there has yet figured out how to be smart and wise at the same time. Wouldn't it be something if we were the first to manage it? The rewards could be mind-boggling.

Others predict not apocalypse, but apotheosis:

ROBERT SAWYER: In a thousand years, we will have reached the limits of the possible. If time travel is possible at all in this universe, we will be doing it; if faster-than-light travel is possible at all, we'll be doing that, too.

DAVID KRIEGER: If you subscribe to Vinge's theory of a Singularity coming down the pike shortly—a technological black hole so dense that no light can be shed on what lies beyond it—you don't try to prognosticate on any scale beyond a few decades. I think everything that is both presently imaginable *and* physically possible will be within the reach of human technology within the next century at most, if we don't annihilate ourselves. At that point, we as a species will, I hope, emerge out of mammalian territorial wrangling into real societal maturity and start seeking appropriately cosmic purposes and challenges.

ARLAN ANDREWS: Before the Third Millennium of the Common Era ends, the human race will have achieved a fusion of individual identities, melding every human mind into one racial intelligence—most likely through a combination of nanotechnology, genetic engineering, and the manipulation of paranormal capabilities latent in the brain and nervous system. This event may take place solely by human will and design or with influences from outside the human race. The resultant Human Intelligence Matrix will take its place in a universe that already teems with like entities, some billions of years old, the sum of which we sense currently in various degrees as the presence of God.

Many say our future will be in space:

ROBERT FORWARD: Early in the next millennium, rotating space tethers will be used to get into space, build space resorts, and provide rapid comfortable transport to high orbit, the Lunar surface, Mars, and any other planet or moon in the solar system worth visiting. Toward the middle of the millennium, mankind will travel to the stars on laser-pushed lightsails, stopping at the target star using magsails. They will plan to stay there ... learning for as long as they live ... then resting for eternity in a glittering orbiting tomb that is larger, more elegant, and more expensive than that of the pharaohs. They will be followed by the first interstellar colonists, perhaps humans with radiation-resistant and age-resistant android bodies.

ABOVE: Time travel might turn from being a thing of SF only, as in Back to the Future, *into a reality.*

JAMES OBERG: The human population off Earth will exceed that on Earth well before the middle of the millennium, and that is *not* a "null case" (one stranded astronaut watches a war-sterilized Earth) but a robust, expansionist result. Technological solutions will be implemented to biosphere disasters ranging from environmental pollution to hurricanes to earthquakes, outward to warding off falling space rocks, solar flares, and even interstellar supernova radiation.

MARIANNE DYSON: The light barrier will remain, but it won't deter exploration and expansion into space because the human lifespan will stretch to thousands of years. As a result, there will be more living things in space than on planets.

ERIC KOTANI: Economical single-stage-to-orbit spaceships will push down the cost of reaching low-Earth orbit greatly. Using continuous acceleration spaceships we will be able to travel to any place in the solar system in weeks to months. Solar-powered satellites will make clean energy available at reasonable cost. Terraforming of some planets and satellites will expand our Lebensraum, and the entire solar system, including asteroids, comets, and Edgeworth-Kuiper Belt objects, will become our domain. We will even mount expeditions beyond our home system. On the other hand, if we fumble this golden opportunity and mess things up environmentally and otherwise, whatever is left of the human race at the end of the next millennium will likely be living in misery.

The life and times of the celebrated author who wields the pen behind Pern!

Introduction

Cead mille Failte—a thousand welcomes, as they say here in Ireland. I've had the pleasure of greeting many of my readers at my house and while I'd love to greet each and every one of you, there'd be no time for writing—and you wouldn't want that!

So, for those that can't come here, and to free myself up for the serious task of writing, we decided to build you a scrapbook of tidbits and pictures. To let you get the feel of things, as it were. It's the same scrapbook we'll be showing my grandchildren as they get older.

I've asked my number-two son, Todd—the same Todd as in *Decision at Doona*—to do the work for me. It's nothing he hasn't done before. In fact, if anyone were to write about Pern, it'd be him.

So settle back, put your feet up, don't mind the cat, and turn the page!

Anne McCaffrey
Dragonhold-Underhill
April 1999

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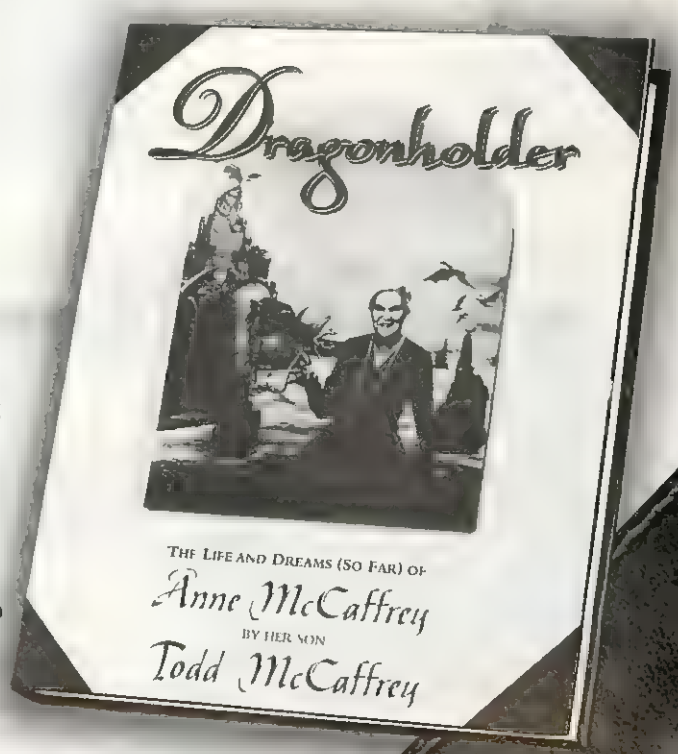

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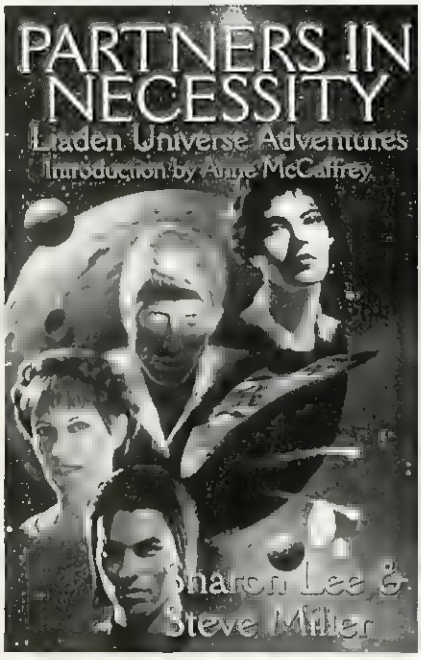

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JACK COHEN: The next millennium will see humans scattered over solar systems and a few between the stars, although I doubt extra-solar colonies.

But a warning from **STEVE GILLETT:** Trying to develop space without molecular nanotechnology is like trying to build an analytical engine without electronics.

Others predict robots and AI:

MARVIN MINSKY: Here's the deal. By 2050 we will know a great deal about the brain, but not everything about it. By 2050, we may have some powerful AI machines. This depends, in my opinion, on progress toward "commonsense reasoning" and ability to use large bodies of diverse kinds of knowledge.

KEN JENKS: Robots will replace humans in all noncreative, repetitive jobs.

GEOFFREY LANDIS: I think we'll go into space, but the "people" who go into space may not exactly be human—they will be our silicon avatars. After all, robots are stronger and tougher and don't need life support and don't get bored. But, when we get smart enough to put our own intelligence, even our own personalities, on electronic chips, how can you tell the difference, anyway? By the end of the coming millennium, we'll be spread out across all the planets of our solar system and many others, and the d. : spaces in between as well—but there won't be any humans in space at all, they will be our electronic ghosts, smarter and faster engineered for the harsh conditions of space. And maybe every now and then, they will think about us biological humans a little, and maybe reminisce about living on planets.

And others predict advances in other fields.

WIL MCCARTHY: Materials scientists are getting pretty good at *making* "quantum dots"—devices which trap electrons in an ato. sized space. The trapped electrons will arrange themselves as though they were in a real atom, even though there's no nucleus inside. It's already possible to create "designer atoms" with properties which do not occur in nature, and there's been tentative progress in getting these atoms to interact. I'll be very interested to see what semi-imaginary "materials" these folks start coming up with as this technology matures.

Many SF writers predict bioscience as the next major advance:

HARRY TURTLEDOVE: Biotech will be as important to the 21st century as electronics were to the 20th and steam and steel to the 19th. I don't know in just what ways, but people a hundred years from now will look back on us and wonder, *How could they live like that?* because they'll take for granted so many things we don't have.

KEN JENKS: Despite accidents, biotech will be the most important invention to come from the second millennium. All of today's diseases will be conquered. Life expectancy will exceed two hundred years. Our definition of humanity will expand.

Continued on page 78

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By Resa Nelson

With *Deep Space Nine* deep-sixed, fans have embraced SCI FI's *Farscape*.

ABOVE: The bizarre cast of Farscape. *BELOW: A new season brings a new face, Gigi Edgely as Chiana. OPPOSITE: Aeryn Sun (Claudia Black) portrays a Peacekeeper who was in the wrong place at the wrong time.*

WITH THE DAWN OF THE YEAR 2000, YOU would think that this would be the perfect time and place for anyone who loves quality Science Fiction on television. After all, we cut our teeth on the original *Star Trek* more than three decades ago, and then watched a new generation of *Star Trek* blossom into multiple series in the '80s and '90s. But time marches on. *Deep Space Nine* has come to an end, and the highly acclaimed *Babylon 5* is long gone. Where can you turn in this new day and age if you crave alien life forms, the wonders of the universe, logical stories, and characters that reflect the gray areas of life as we know it?

The answer is *Farscape*, one of the prime time offerings on the SCI FI Channel. With production values equal to those of feature films, extremely intelligent characters and story lines, and a completely unpredictable nature, *Farscape* has what it takes to become the next major-league Science Fiction franchise. And from day one, the SCI FI Channel has consistently given the green light to *Farscape* to push itself into frontiers typically not seen on TV.

Farscape is the brainchild of Hollywood veteran Rockne S. O'Bannon (the film *Alien Nation*, TV's *seaQuest DSV*, and *The Twilight Zone*) and The Jim Henson Company. Together, they invested five years in the development of *Farscape*. "They wanted to do a show that would show off all the wonderfully varied aspects of the company," O'Bannon says about his co-creators at The Jim Henson Company. "Something that would not only highlight the production expertise but also the animatronics and the computer graphics, which at that point was just starting to show itself.

"(*Farscape*) tells the story of a far, distant galaxy where someone from our time—a traveler from Earth in our era—is a part of that. So (*Farscape* is) unlike *Star Trek*, which takes place 500 years in the future ... or *Star Wars*, which takes place a long time ago in a galaxy far, far away. *Farscape* takes place today. So it's like watching one of us, out of (present-day) Earth, drop into the middle of a totally alien world at the other end of the system."

The hero of *Farscape* is its only human character, John Crichton (played by *Party of Five*'s Ben Browder). In the premiere episode, Crichton is an American astronaut who is flying an experimental mission when his ship accidentally enters a wormhole. The wormhole spits Crichton out at the far reaches of the universe, where he immediately finds himself in the midst of a battle between a handful of escaped prisoners and a human-like race called the Peacekeepers, who are actually mercenary soldiers.

By the end of the premiere episode, Crichton ends up aboard a living ship (Moya, who has her own alien Pilot) along with the escaped prisoners: Zhaan (played by *Road Warrior*'s Virginia Hey) is a cool, calm, and serene Delvian priest; D'Argo (played by Anthony Simcoe) is a hot-tempered Luxan warrior; and Rygel the Sixteenth (a Jim Henson creature with voice by Jonathan Hardy, movement by John Eccleston) is a greedy, glutinous, and pompous Hynerian emperor. The escaped prisoners tend to be pretty close-mouthed about exactly what it was that they did to end up behind bars.

In addition to Crichton and his convicted traveling companions, there's a fly in the ointment. Crichton wasn't the only unwelcome stranger to find himself onboard ship with prisoners Zhaan, D'Argo, and Rygel. Peacekeeper officer Aeryn Sun (played by *Pitch Black*'s Claudia Black) uninten-

tionally ended up on board as well. But here's the kicker: Sun's fellow Peacekeepers now consider her to be irreversibly contaminated as a result of her prolonged exposure to the prisoners and Crichton.

In Season 1, the Peacekeepers have been in hot pursuit of not only Crichton and the escaped prisoners, but Sun, as well. Crichton and the prisoners are lost in uncharted territories, and they simply want to find their respective ways home. But that leaves Sun out in the cold. She can't return home because she no longer has one.

While *Farscape* boasts not only plots and special effects that are worthy of a feature film, its true strength lies in the conflict between its characters, their changing relationships, and the honesty of their strengths and weaknesses.

"You know the stages of death?" Browder says. "Denial, rage, acceptance ... I think that's John's journey. I think the first thing is that he's confused, and then he wants to deny it, and then finally he gets to the point of acceptance. And then, of course, about the time he gets comfortable and accepts it, the writers turn (the series) on its head again ... what you thought was going to happen—or what you thought was true about the characters—begins to shift and slip yet again. What I love about the show is its unpredictable nature.

"The only constant for our show is the characters. Everything else seems to be anarchy. And I think that's the way the uncharted territories are. I think that's the world (that the writers) want Crichton reacting to. They're not looking for a sort of well-defined universe, which we so often see on TV or in Science Fiction. Crichton is living in chaos and trying to make sense out of it. And that's the experience that, in some ways, I think we give to the audience."

It makes sense that *Farscape* reflects a certain sense of chaos. Unlike, *Babylon 5*, which was carefully designed in advance, *Farscape* grows and develops on the fly. The writers typically block out six episodes at a time. Furthermore, the show's creators and writers have been shaping the show around the strengths of its actors.

"It's fantastic to feel like a participant rather than a receiver in terms of the development of the storyline," Simcoe says. "If the creative process becomes a dialog between all the collaborators, then you're going to get the strengths of everyone. You have a much stronger show."

O'Bannon explains how Simcoe surprised the writers with his portrayal of the hot-tempered warrior, D'Argo. "Anthony Simcoe is big, gentle, incredibly bright, and very well read. He's like a big, fun, really bright puppy dog. He's not D'Argo at all. He can play the brutish D'Argo real readily and easily, but he would start to bring a subtlety and sensitivity to D'Argo that we in the writers room (said), 'How can we capitalize on this?'

"We ... started to turn D'Argo away from simply being the warrior icon that he was early on to a character with lots of shading."

Simcoe explains how he approaches the role of D'Argo. "When I look at a part, I try and work out what I get for free, and then how can I juxtapose that ... and make it more interesting for the people watching me. The first couple of episodes—with the look of D'Argo—you try and establish his character, which is essentially quite brutish, warrior-like, quick-tempered, wants to fight all the time. I try to switch that on its head all the time, so then you actually find out that he's really just a teenager with a lot of bluster who's ... worried about his family and friends. He still makes quick, hot-tempered decisions, but it comes from a place of real, beautiful naiveté. And I think that's a fantastic gift for me to have such a rustle-tussle, mean-looking exterior, because it gives me the chance to make soft choices time and again. It gives me these lovely opportunities to really soften him down. That's really fleshed him out as a character, which I'm pleased about."

Just as Simcoe has shown the vulnerability of his warrior character, Claudia Black has provided what is possibly the most unexpected performance as Sun, the dispossessed Peacekeeper. "It's awesome to watch such wonderful restraint from Claudia," O'Bannon notes. "Aeryn has made the transition, obviously, from straightforward, Peacekeeper-indoctrinated soldier to a member of the crew. But in the hands of a less disciplined actor, I believe that Aeryn would be a softie by now. The thing about Claudia is that she's able to take glancing blows at the emotional

Are they enemies of change...

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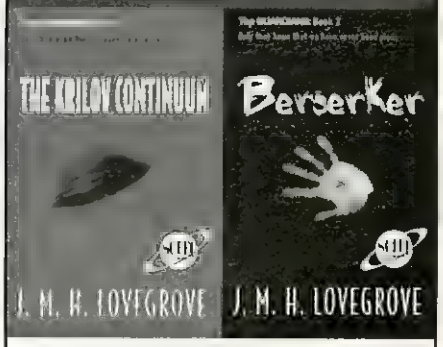

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side of Aeryn, and we know that the others are getting through to her but without know what's going on inside of her."

Both the SCI FI Channel and *Farscape*'s writers have paved the way for *Farscape*'s actors to stretch their characters in unforeseen directions. O'Bannon describes how working with SCI FI has made his job easier. "The fun for us was to break as many rules as possible and bend as many of the remaining rules," O'Bannon says. "The big advantage that we have with this series (is that the SCI FI Channel is not) one of the regular networks, where they need to appeal to a much broader, more homogenous audience, where they ask you to tone things down. As I was finalizing the pilot script, Stephen Chao (President of Programming and Marketing, USA Networks, Inc.) kept telling me to push it farther, make the characters even more acrimonious, make the situations even more extreme and intense. I took that very much to heart."

With the support of the network behind them, the writers create a universe that strikes a genuine balance between its male and female characters.

In regard to the strength of *Farscape*'s female characters, Black says, "It is television history in the making. I know that sounds dramatic ... but we owe a lot to current television icons like *Xena: Warrior Princess*. The more the audience appears to be comfortable with females taking charge on the screen, the more these characters can flourish."

Browder not only agrees, but cites Shakespeare's collective work as an example of how strong female characters contribute to fiction. "He has terribly strong women," Browder says. "And I happen to think that's real. And I think that the audience relates to it because it's real. I don't think there's anything in making a woman strong that makes her less feminine. And, likewise, I don't think being feminine makes them weak. Zhaan (Virginia Hey) is an incredibly feminine character, yet incredibly strong."

Which leads to an interesting and ongoing conflict between two of *Farscape*'s characters. Crichton is the only human in the series. And Sun, while a Peacekeeper, is a Sebacean—a human-like race. Although initially enemies, there were also initial sparks between the two characters. But unlike *The X-Files*' Scully and Mulder, *Farscape*'s characters recognize that chances are, eventually, they will be going their separate ways. They're realists.

"It's an enormously dramatic premise on which to establish a relationship," Black says about her character's predicament. "Crichton's desperately trying to find his way home. Aeryn cannot go home. And they're constantly being faced with challenges which threaten their survival ... there's such enormous conflict between their worlds, their lives, and the existences that they know independently, and yet there's this connection and attraction between them, which you really see from the beginning. In the premiere, Aeryn makes a decision, despite her training, to support Crichton.

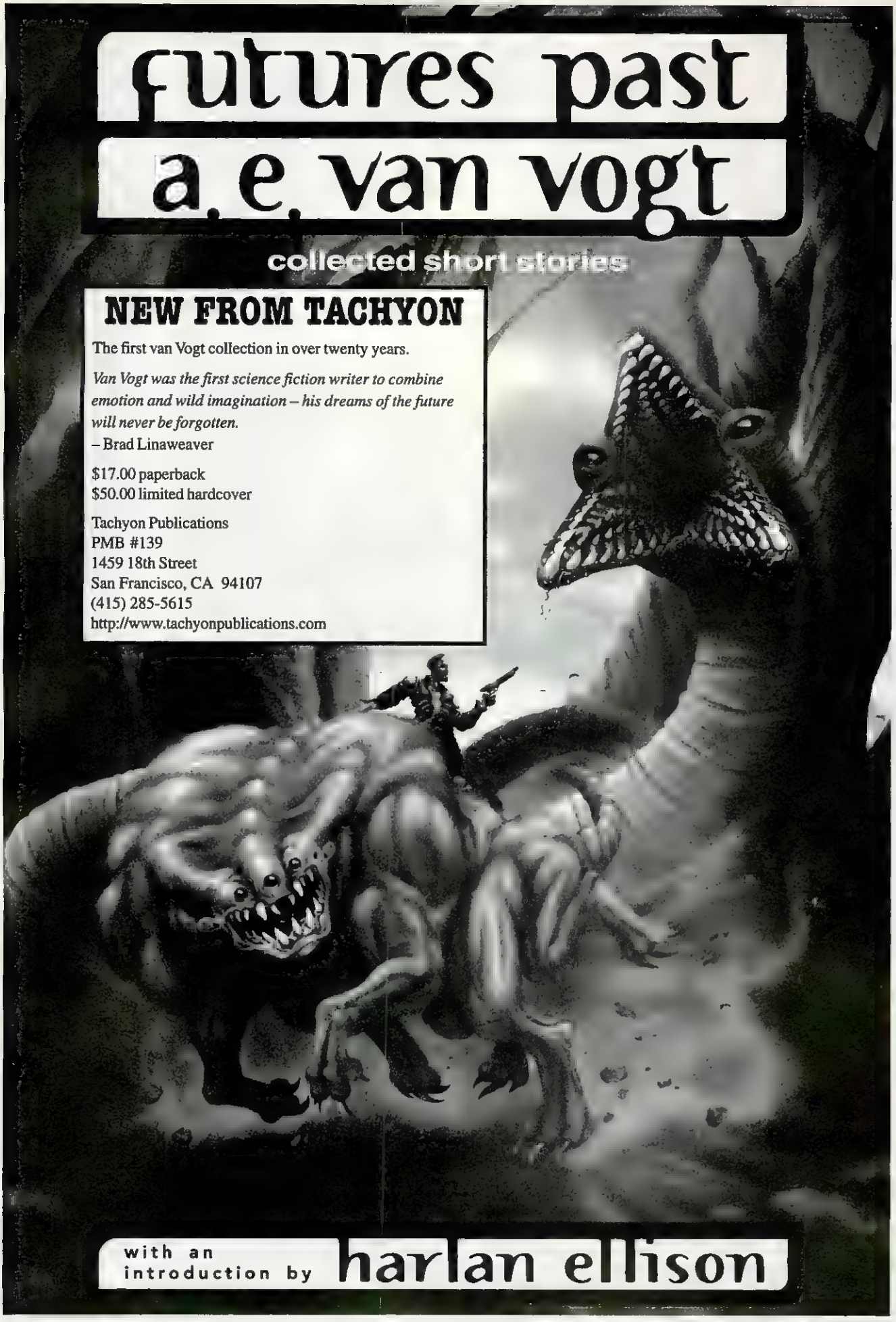
"We have been careful and very mindful of the fact that we're dealing with a very intelligent audience, and there's no point in teasing or being coy about their attraction ... as Aeryn and Crichton learn to be friends and trust each other, there will be more interesting dialog, more interesting communication between them. But I think the tension comes from the constant situations they get placed in where their allegiance is challenged or threatened."

In fact, the relationships between all of the characters undergoes constant testing. Although the escaped prisoners, Crichton, Sun, the living ship Moya, and Pilot have learned to work together as a family, there is little room for sentimentality on *Farscape*. Zhaan's serenity has been broken by Rygel's irritating behavior. Zhaan has shown her ability to lose her temper in one episode and her dark side in others. D'Argo has led the prisoners in a decision to cut off one of Pilot's arms, which they traded to a mad scientist who promised them, in return, maps to their home planets. Rygel has taken a bite out of Sun's arm—and swallowed what he bit off.

Puppeteer John Eccleston (TV's *Storyteller)*, who provides movement for Rygel, describes the role of his character in regard to the other escaped prisoners. "In very simplistic terms, the characters are elements of human emotions... Rygel—for his sins—is the greedy glutinous, pompous, self-important part that we all have inside us. So his role ... is to hold a mirror up to ... John Crichton (so he can) recognize some of those elements in himself. The strangest thing is when the director shouts, 'Action!' and it all happens and everybody's there, everybody's in the moment, it's a reality. Even if it's only for maybe a minute's worth of shooting, for that minute, you're somewhere off in space. You're on the other side of the galaxy."

If you didn't already know how to get to the other side of the galaxy, you do now. Just turn on *Farscape*, and enjoy the ride. □

TOP: John Crichton (Ben Browder) is flung across a thousand galaxies when an experimental mission goes wrong. ABOVE LEFT: The sword-swinging Luxan warrior D'Argo (Anthony Simcoe). ABOVE RIGHT: Another addition to an unusual cast.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Dominic Harman 99

BY STEPHEN BAXTER

Illustration by Dominic Emile Harman

Background:

In 3060, Reid Malenfant, the man who made first contact with the alien Prion, returns to an Earth dominated by the Prion. Malenfant, stranded out of time by relativistic dilation, is old, weary, but still motivated by dogged curiosity about the Prion and their enigmatic long-term projects. He finds a crude nuclear pile, operated by reconstructed Neandertals, which is used to power a deep-buried Saddle Point gateway. Malenfant penetrates the gateway—to find himself on Jupiter's moon, Io. Here, the Neandertals are engaged on a long-term construction project for the Prion; the moon has been turned into an antimatter factory. When the Neandertals die, it appears they are stored in a small object Malenfant knows as the Staff of Kintu.

Saving the life of one of the Neandertals, Malenfant is almost killed ...

SADDLE POINT: the children's crusade

The adventures of astronaut Reid Malenfant continue in the concluding chapter of the Saddle Point saga.

Limbs that worked. Tactile, graceful. Tasks that were progressed.

The rope: complex, multilevel, a thing of monomolecular filaments, superconducting threads within. The extension of the rope, the repair of breaks, the tasks of the limbs.

Visual receptors, eyes. A repositioning. Data nets above, below, all around, a great curving wall. At extremes, a flat-infinite plane, in every direction.

Above, the spitting neutron star, its envelope of gas.

Here, a body, a spider-like form of many limbs, a dodecahedral box at the center. Multiple tasks for those limbs. The net that was repaired, extended; the body that was maintained, adjusted, itself extended; records that were kept; a mesh of communications with others that was maintained, extended.

Others. Some near. Some far. Some as this body, a common design. Millions of them. Some not. Here with tasks that were progressed.

Vibrations, the shudder of torn threads, in the structure. Complex modes, wave forms in space and time.

War, in a remote part of the net.

A position that was adjusted, an anchoring that was improved and secured.

The work that was progressed in one part of the net, war in other parts.

The anchoring. The self-maintenance. The work. The universe, of tasks, of things. No center.

... And he felt as if he were drowning, struggling up from some thick, viscous fluid, toward the light. He wanted to open his mouth, to scream—but he had no mouth—and no words. What would he scream?

I.

I am.

I am Malenfant ...

No. Not just Malenfant. Malenfant/Esau/Cassiopeia.

The shuddering of the net. The anchoring. The work that was progressed …

No! More than that. I feel the shudder. I must hold on; I must continue the work, in the hope that sanity will prevail, the conflict resolved, the work continued, the greater goal achieved.

Thus it must be.

Terror flooded over him.

How the hell did I get here?

A row of faces, listening to him:

My name is Reid Malenfant. Thanks for inviting me to speak to you.

You know me. And you know I'm an incorrigible space cadet.

You know I've campaigned for, among other things, private mining expeditions to the asteroids. In fact, in the past I've tried to get you to pay for such things. I've bored you with that often enough already, right?

So tonight I want to be a little more personal. Tonight I want to talk about why I gave over my life to a single, consuming project.

It started with a simple question.

Where is everybody?

As a kid I used to lie at night out on the lawn, soaking up dew and looking at the stars, trying to feel the Earth turning under me. It felt wonderful to be alive—hell, to be 10 years old, anyhow.

But I knew that the Earth was just a ball of rock, on the fringe of a nondescript galaxy.

As I lay there staring at the stars—the thousands I could pick out with my naked eyes, the billions that make up the great wash of our galaxy, the uncounted trillions in the galaxies beyond—it seemed crazy to me, even then, that there was nobody out there looking back at me down here.

Was it really possible that this was the only place where life had taken hold—that only here were there minds and eyes capable of looking out and wondering?

But if not, where are they? Why isn't there evidence of extraterrestrial civilization all around us?

Consider this. Life on Earth got started just about as soon as it could—as soon as the rocks cooled and the oceans gathered. Of course it took a good long time to evolve us. Nevertheless we have to believe that what applies on Earth ought to apply on all the other worlds out there, like or unlike Earth; life ought to be popping up everywhere. And, as there are hundreds of billions of stars out there in the galaxy, there are presumably hundreds of billions of opportunities for life to come swarming up out of the ponds—and even more in the other galaxies that crowd our universe.

Furthermore, life spread over Earth as fast and as far as it could. Already we're starting to spread to other worlds. Again, this can't be a unique trait of Earth life.

So, if life sprouts everywhere, and spreads as fast and as far as it can, how come nobody has come spreading all over us?

Of course the universe is a big place. There are huge spaces between the stars. But it's not that big.

Even crawling along with dinky ships that reach only a fraction of light-speed—ships we could easily start building now—we could colonize the galaxy in a few tens of millions of years. One hundred million, tops.

One hundred million years: It seems an immense time—after all, a hundred million years ago the dinosaurs ruled Earth. But the galaxy is a hundred times older still. There has been time for galactic colonization to have happened many times since the birth of the stars.

Remember, all it takes is for one race somewhere to have evolved the will and the means to colonize; and once the process has started it's hard to see what could stop it.

But, as a kid on that lawn, I didn't see them. I seemed to be surrounded by emptiness and silence.

There are no signs of civilization-produced radio emissions. Even we blare out on radio frequencies. Why, with our giant radio telescopes we could detect a civilization no more advanced than ours anywhere in the galaxy.

More advanced civilizations ought to be much more noticeable.

We could spot somebody building a shell around their star, or even throwing in nuclear waste. We could probably see evidence of such things even in other galaxies. But we don't. Those other galaxies, other islands of stars, seem to be as barren as this one.

Maybe we're just unlucky. Maybe we're living at the wrong time. As I said, the galaxy is an old place; maybe They have been, flourished, and gone already. But consider this: Even if They are long gone, surely we should see Their mighty ruins, all around us. But we don't. The solar system appears to be primordial, in the sense that it shows no signs of the great engineering projects we can already envisage, like terraforming the planets, or tinkering with the Sun, and so on.

We can think of lots of rationalizations for this absence.

Maybe there is something that kills off every civilization like ours before we get too far—for example, maybe we all destroy ourselves in nuclear wars or eco collapse. Or maybe there is something more sinister, plagues of killer robots sliding silently between the stars, which for their own antique purposes kill off fledgling civilizations like ours.

Or maybe the answer is more benevolent. Maybe we're in some kind of quarantine—or a zoo.

Maybe there is something more sinister, kill

But none of these filtering mechanisms convinces me. You see, you have to believe that this suppression mechanism, whatever it is, works for every race in this huge galaxy of ours. All it would take would be for one race to survive the wars, or evade the vacuum robots, or come sneaking through the quarantine to sell trinkets to the natives—or even just to start broadcasting some Eetie version of *The Simpsons*, anywhere in the galaxy—and we'd surely see or hear them.

But we don't.

This paradox was first stated clearly by a 20th-century physicist called Enrico Fermi, and it strikes me as a very profound mystery. The contradictions are basic: Life seems capable of emerging everywhere; just one starfaring race could easily have covered the galaxy by now; the whole thing seems inevitable—but it hasn't happened.

Thinking about paradoxes is the way human understanding advances. I think the Fermi paradox is telling us something very profound about the universe, and our place in it.

Of course, everything is different now.

Let me tell you how the Fermi paradox started unraveling for me. It was on the far side of the Moon …

From the Moon, via the stars, to Io. And on Io, at last, there had been only fragments:

Lying flat. No feeling anywhere.

Stars overhead. Vision bouncing. One eye still working? Being carried?

Walls around him, lifting up, a circle of thick-browed faces.

… Oh. A grave. He was the old geezer now. He tried to laugh, but nothing seemed to be working.

Something in the corner of his vision. A metallic glint.

Io dirt raining over his chest.

Reid Malenfant smiled.

With every Saddle Point transition there is a single instant of pain, unbearable, agonizing …

There was a flash of pink light.

Reid Malenfant was looking through a kind of gateway.

He saw a hillside. It was covered with grass; he wished he could feel it under his bare feet. There was a sun in the sky. Maybe it was Sol.

The hillside seemed to go on forever.

There were Neandertals everywhere, little groups of them, spreading out in the warmth of the new world, as far as he could see.

Thousands of them. Generations of them.

He touched his face. He was still Reid Malenfant, astronaut and explorer. And he wasn't dead yet. And here he was, stored inside the Staff of Kintu, on his way to … well, wherever the hell.

Still it goes on, Malenfant.

He felt a moment of immense weariness. Maybe he should just curl up, right here on this unreal hillside, and die.

Death, in fact, an end to the questions, would have been a relief.

But the sunshine was too cheerful.

He looked down. He was naked. He grinned. Well, hell, you couldn't have everything.

The first thing to do, he figured, was find somebody in charge.

He would step forward, the grass hissing under his bare feet, following the Neandertals.

… But the gateway seemed to be closing.

He opened his eyes. There were metal walls over him, a crude box-shape.

A face hovered over him. It was distorted: a high, bulbous forehead, shriveled nose, ridiculous jutting chin.

It was no Neandertal. It was a human.

He opened his mouth, tried to speak.

"I found you just in time, Malenfant. Those ape men were trying to kill you."

"Meacher? … "

"I didn't hurt them," Madeleine Meacher said. She cupped his face. "I rescued you, Malenfant."

"I wanted to die."

"You can't die. We've got work to do. The Prion—"

"Let me back," he whispered. "Oh, let me back!"

"Malenfant—"

With the last of his strength he grabbed her, and hauled her into the welcoming pink light.

Madeleine Meacher woke to the movement of air: the rustle of wind in trees, perhaps the hiss of grass, a breeze on her face, gently cold. Eyes closed, she was lying on her back. She could feel something tickling at her neck, the slippery texture of leaves under the palms of her hands.

She opened her eyes. She was looking up at the branches of a tree, silhouetted against a blue-black sky. She was warm, immersed in the scent of dew, of wood smoke. Somewhere crickets were calling.

The sky was crowded with stars.

Io. Malenfant in the grave. The pink flash.

She sat up, suddenly afraid. She saw a flickering fire, a figure squatting beside it. "Malenfant?"

The figure turned toward her. He was holding something on a stick, she saw, perhaps a fish. He stood straight now, and came walking easily toward her. His head was silhouetted against the crowded stars; he was bald, his skin smooth as leather.

It was Malenfant.

He crouched before her, reached out, and held her hand. He felt warm, real, calm. "You OK?"

She thought about that. "I guess." She wiggled her fingers and toes, turned her head this way and that. Everything intact and mobile; nothing aching; not so much as a cricked neck. He was wearing a pale-blue coverall, white slip-on shoes, she noticed. When she glanced down, she found she was wearing the same bland outfit. The smell of the fish reached her. "In fact, hungry."

He laughed. "I caught a couple more."

"You've been fishing?"

"What else is there to do? I mined my old spacesuit. Not for the first time. A thread, a hook made from a zipper … I felt like Tom Sawyer." He was studying her. "You were out cold. I thought I'd better leave you. We don't seem to have any medic equipment here."

"Malenfant, you were nearly dead when I found you, in that hole in the ground. Your burns—"

"Just look at me now." Emulating her, he clenched his fists, twisted his head. "I haven't felt so good since the Bad Hair Day twins had a hold of me."

"Who?"

"Long story. Look, you want some fish?" And he loped back to the fire, picked up another twig skewered with a second fish, and held it over his fire of brush wood.

She got to her feet—gravity about Earth-normal, she noted absently—and followed him.

She could see this grassy plain roll to the distance, dotted with sparse trees, all of it black and silver in the starlight, like a scene from a savannah. But where Malenfant's fire cast a stronger light, she could see the grass was an authentic green.

The starlit sky was bright, like the light of a quarter-Moon, perhaps. There was a pattern of bright stars near the zenith that looked like a box, or maybe a kite; another bit over, six stars arranged in a rough, squashed ellipse. She recognized no constellations, though.

er robots sliding silently between the stars.

She thought she saw movement, a shadow flitting past a stand of trees. She waited for a moment, holding still. There was no sound, not so much as a crackle of undergrowth under a footstep.

She hunkered down beside Malenfant, accepted half a fish, and bit into it. It was succulent, but tasteless. "I never much liked fish," she said. "Where's the stream?"

He nodded, beyond the fire. "That a way. I took a walk. No animals. No people. No dwellings."

"You walked during the daylight?"

"No." He tilted back his head. "When I woke up it was night, as deep as this."

She shivered, suddenly longing for light. "Malenfant, in those trees over there. I thought I saw—"

"There are Neandertals here," he said quickly. "You don't need to fear them. I think they're the Neandertals from Io. Maybe some of them are from Earth, too. I think they were brought here when they were close to death. I haven't recognized any of them yet."

"Would you expect to?"

"There is one old guy I got to know a little. I called him Esau. He must be here somewhere."

He didn't seem concerned, confused by the situation.

"Malenfant … we aren't on Io any more, are we?"

"No. We came through a Saddle Point gateway. Perhaps more than one." He pointed at the stars with his half-eaten fish. "That's no sky of Earth."

"Then where?"

"Somewhere closer to the center. The center of the galaxy, I mean. Look at this." He stood, took her by the hand and pulled her to her feet, and led her past a stand of trees. "Look over there."

Close to the horizon, the sky was crammed with stars: layer upon layer of them, thousands of bright solo stars that gleamed against a mist of gray light, great banks and clouds and reefs of stars. Here and there, dark lanes cut through the glimmer.

"It's the Milky Way," she said.

"Yeah. The disc of the galaxy. But a lot more prominent than I ever saw it before."

"We're a long way from home, aren't we, Malenfant?"

"Yes. I think we've come to the edge of the network."

"The Saddle Point network?"

"Yes. We know it is no more than a couple of thousand light-years across, just a fraction of the way to the center of the galaxy—"

"Thirty thousand light-years." She dug out the number, looking for something to cling to, some piece of knowledge, a framework.

"We might have reached a radius where the Saddle Points aren't working anymore. Which is a problem if you want to go farther." He was speaking steadily, evenly, as if discussing a hiking tour of Yosemite.

Madeleine felt something inside her crack. "Malenfant—"

"Hey." He was immediately before her, holding her shoulders, tall in the dark. "Take it easy."

"I'm sorry. It's just—"

"It's just we're a long way from home."

"I've got a lot to tell you." That predatory aliens were waging war in the heart of the solar system—where to begin? …

"Madeleine."

She looked up at him; his eyes were wells of shadow in the starlight.

"None of it matters. Not to us. Look around, Madeleine. We're a conservative thousand light-years from home. Whatever happened is already a thousand years remote."

"So what do we do?"

He said gently, "The first thing I did was go behind those bushes over there and take a good solid dump."

That made her laugh out loud.

"Yeah. Kind of crude. Just a few score of the brightest stars. Now look here, here, here …"

Some of the points were double.

"The stars have shifted," she said.

"Yeah. Here's where this one was yesterday—or before we slept, anyhow. And here's where it is now." He shrugged. "The shift is small—hard to be accurate without instruments—but I think it's real."

"I noted it too," she said.

"There are more stars than yesterday," he said quietly. "On the whole, they seem brighter. And they are flowing across the sky—" he swept his arms over his head, toward the bright Milky Way band on the horizon "—thataway."

"What does it mean, Malenfant? Why that way?"

He looked up at her and grinned. "Because that's the way we're headed."

One of the Neandertal women was working a rock, making tools. She held a core of what looked like obsidian, a glassy volcanic rock. She gave the core one sharp strike, and a flake of it dropped off. A few light strokes along the edge and the flake had become a tear-shaped blade, like an arrowhead.

The woman, with a lop-sided grin, gave the knife to one of the males, signing rapidly.

Malenfant murmured, "She's saying he should be careful of the edge."

She frowned. "Malenfant, back there, on Io—"

"Yes?"

"I really had come out there to rescue you, to bring you home. You were dying. It was hot. And there were pink flashes."

"Gateway flashes."

"That metal rod you were clutching—"

"The Staff of Kintu."

"We're a million years out of Africa, Made

By the time they'd eaten more fish, and some yam-like fruit Malenfant had found, it was still dark, with no sign of a dawn. So Madeleine pulled together a pallet of leaves and dry grass, and tucked her arms inside her coverall, and fell quickly asleep.

When she woke, it was still dark.

Malenfant was hunkered down close to a stand of trees. He seemed to be drawing in the dirt with a stick, peering around at the sky. And he was looking ahead, too, at a group of figures, shadowy in the starlight.

Neandertals?

She walked toward Malenfant. There really was no sign of the dawn yet, no sign of a moon: not a glimmer of light, other than starlight, on any horizon.

And yet something was different, she thought.

Were the stars a little brighter? Perhaps some kind of thin mist had cleared away. Certainly that Milky Way glow close to the horizon seemed stronger. And, it seemed to her, the stars had shifted a little, in the sky. She looked for the star patterns she had noted last time she was awake—the box right overhead, the ellipse. Were they a little distorted, a little squashed together?

She joined Malenfant. He handed her a piece of fruit, and she sat beside him.

The Neandertals seemed to be a family group: five, six adults, about as many children. They seemed oblivious to Malenfant's scrutiny. They were hairy, squat, naked: cartoon ape men. And two of the children were wrestling, hard, tumbling over and over, as if they were more gorilla than human.

Malenfant showed her the sketches he'd made in the patch of dirt before him. It was crude, just pits made with the point of his stick. But she recognized the box, the ellipse—

"It's a star map."

"I thought it was, I don't know, a bomb. I had crew mates with me. But you grabbed me and pulled me in."

"I guess I didn't want to be rescued just then."

"You were dying."

"But I knew it wasn't the end of the story. I knew there was something beyond. This."

"How did you know that?"

"Because it was clearly what the Neandertals believed." He told her what he'd observed of the Neandertals' burial practices.

"So you think the Prion were rewarding the dying Neandertal workers for all their labors with this—a soapy Heaven."

He laughed. "If they were, they are the first gods in history to deliver on their afterlife promises … no offense."

"I think we're beyond that, Malenfant." She probed, "And so this is a Neandertal theme park."

"But," he said, "it's also much more than that. Don't you see?"

"No, I don't. Why don't you just tell me?"

"All I have is guesses. I don't know." He looked up at her, and for the first time since they arrived here she thought she saw fear in his eyes. "The Prion want something of me. Of me."

"What? What do they want, Malenfant?"

But he wouldn't, or couldn't, answer that.

She asked, "Why is it like this? Trees, grass, streams—it feels like Africa. But it isn't Africa, is it?"

"No."

"Then why—"

"You know," he said, "if you ask almost any human, anywhere, what type of landscape they prefer, it's something like this. Flat grass, a few flat-topped trees. Even Clear Lake, Houston, fits the pattern: grass out front, maybe a tree or two. And you never put your tree in front of your window; you need to see out, to see the predators coming

from out of your cave. We're a million years out of Africa, Madeleine, a thousand light-years away." He tapped his chest. "But it's still here, inside us."

"And that's why—" she indicated the savannah "—this?"

"After taking us apart for a thousand years, the Prion know us well. And our Neandertal cousins."

"*You're saying* they've given us an environment that we're comfortable with." She stood, pacing, feeling the texture of the grass under her feet, the breeze on her face. "You're saying this is manufactured?"

"Of course it is."

"The air," she said. "What we smell. The grass. The gravity. If this is some immense virtual reality tank almost any of this could be synthesized."

He nodded. "I think very little of what we see is real." He pointed at the sky. "But that is."

"How so?"

"Because it's changing."

She slept and woke again, and the sky, once more, changed dramatically.

She lay on her back alongside Malenfant.

He said, "Tell me what you see."

"The stars have migrated. We saw them starting to shift yesterday. Now they have all swum their way up toward that Milky Way horizon. The way you say we're heading. The opposite horizon looks dark. All the stars have crowded themselves into a disc, centered on a point some way above that bright horizon—at least I guess it's a disc; some of it is below our horizon. And the colors have changed. The stars are green and yellow and blue."

"But they ain't the same stars," he growled. "At least, not all of them. I spotted a dim red star two days ago. Maybe a red giant. Yesterday *that baby* looked yellowish, and it was crawling up the sky. Now it's shifted farther, and it's turned blue."

"This is the aberration of starlight, isn't it, Malenfant? The distortion of the visible universe, which you would see if—"

"If you travel extremely quickly. Yes," he said softly.

She understood the principle. It was like running in the rain, a rain of starlight. As she ran faster, the rain would hit her harder, in her face, her body. If she ran extremely fast indeed, it would be as if the rain were almost horizontal …

"We're on a starship," she breathed.

"Yeah. Already going so fast that most of the stars we see up ahead there must be red giants, infrared sources, invisible to us in normal times. All the regular stars have been blue-shifted to invisibility. We must have traveled right across the working Saddle Point network, and out the other side. But we have a lot farther to go yet. And so the Prion built a starship."

She sat up and dug her fingers into the grass. "But it doesn't feel like a starship. Where is the crew? Where are we going? What will happen when we get there?"

"I only have guesses," he said. He got to his feet. "What do you think we should do now?"

She shrugged. "Walk. There's nothing to stay for here."

"OK. Which way?"

She pointed to the glowing Milky Way horizon, the place the stars were fleeing, their putative destination.

He smiled. "So we can add a couple of kilometers an hour to our 80 percent of light speed? Hell, why not? We're walking animals, we humans."

Malenfant picked up the sack containing his ancient spacesuit. Then, obeying some obscure impulse for tidiness, he scuffed over his dirt-scraped star map.

Then they set off.

They passed the Neandertal family, who sat where they had yesterday.

When Madeleine looked back, the Neandertals were still sitting just where they had been, unmoving, as the humans receded, the stars flowed overhead.

The next time she woke, there was only a single source of light in the sky, a small disc. It was brighter than a full Moon, less bright than the Sun seen from Earth, tinged distinctly bluish. Aside from that the cloudless sky was utterly empty.

Malenfant was standing before her, staring at the light. Beyond him she could see Neandertals, a family group of them, standing too, staring into the light, their awkward heads tipped back. Shadows streamed from the light, of people and trees, steady and dark.

She stood beside Malenfant.

"What is it, Malenfant? The stars?"

He shook his head. "Don't think so. We're going so fast the stars have all blue-shifted to invisibility. I think that's the afterglow. The background heat of the universe, left over from the Big Bang, stretched to a couple of degrees above absolute zero. We're going so fast now, just a tad lower than light speed, that even that has been crumpled up by aberration, crushed to that tiny disc. Hell of a spectacle, don't you think?"

She felt weak, her legs numb. Carefully she lowered herself to the grass, dug her hands into the rich cool texture of the ground.

He said, "I remember the first time I left Earth, en route to the Saddle Point, seeking the Prion. And I looked back and saw the Earth dwindle to a dot of light smaller than that. And I thought of how everything I'd ever known—and more, five billion years of geology and biology, of sliding continents and oceans and plants and dinosaurs and people, were all crammed into that little splinter of light, surrounded by nothing. And now the whole damn universe, stars and galaxies and squabbling aliens and all of it, is contained in that little dot of light." He held his hand up before him, shading the universe-sun; she saw its shadow in his face.

"Malenfant, none of this is real. Is it? Apart from the sky—it can't be."

"No. It can't be."

He told her he thought they were riding an antimatter rocket, perhaps a kind called a beam-core engine. "It's simple, in principle. You just have your tanks of atoms and antiatoms—hydrogen, probably, the antistuff contained in a magnetic trap—and you feed it into a nozzle and let it blow itself up. The electrons make gamma rays, and the nuclei make pions, all high-energy stuff, and some of the pions are charged, so that's what you throw out the back as your exhaust.... It explains what the Prion were doing on Io."

"Making antimatter."

"Yeah. Using the energy in Jupiter's magnetosphere. Probably turned the whole damn moon into one big atom-smasher, and picking the antimatter out of the debris."

"It must have taken the Prion a long time, an immense project, to assemble the antimatter they needed."

"Oh, yeah. Big engineering."

Madeleine said, "Tell me one thing, Malenfant. There is no way you could haul all of this—" she indicated the plain, the trees "—a ship the size of a small moon up to relativistic speeds, all the way to the galaxy core. Is there?"

He looked at her. "I saw a study that said it would take a hundred tons of antimatter to haul a single ragged-assed astronaut to Proxima Centauri. It would have taken our biggest atom-smasher two centuries to produce so much as a milligram. I doubt that whatever the

leine—a thousand light-years away."

Prion built on Io was so terribly advanced over that. So—no, Madeleine. You couldn't haul a small moon."

Therefore, Madeleine thought, *things here are definitely not as they seem.* She felt a small knot of renewed fear and disorientation settle in her stomach.

She studied her hand. "What are we, Malenfant? You think we're some kind of—programs—running inside a giant computer?"

"It's possible." His voice contained a shrug, as if it didn't matter. "It only takes a finite number of bits to encode a human being. That's because of uncertainty, the graininess of nature.... If not for that, the gateways wouldn't be possible at all. On the other hand, maybe we're real, but shrunken down somehow." He dug into the ground until he came up with a stone the size of his thumbnail. "If the universe were the size of this rock, then each star would be the size of a quark. There are orders of magnitude of scale, structure, beneath the level of a human. Plenty of room down there."

She felt a pulse in her head, a pressure. "But," she said, "if we're just emulations in some toy starship, we're dead. I mean, we're no longer us. Are we? How can we be?"

He eyed her. "The first time you stepped through a gateway you were no longer you. Every transition is a death, a rebirth. Why do you think it hurts so much?"

She stared at him. "Don't you care?"

"Of course I care." He shrugged. "It's just that there are some things more important."

"Like what?"

"Maybe we'll soon find out."

She followed his gaze. There, perhaps a half-kilometer away, she made out a new shadow: angular, gaunt, crisp, and precise before the cosmos light.

It was a Prion.

Machinery, not life: That was her first impression. There was the famous dodecahedral core. A variety of instruments, things like cameras and other sensors, protruded from the dodecahedron's skin, and the skin itself was covered with fine bristly wires. Three big robot arms stuck out of that torso, each articulated in two or three places. Two of them were resting on the ground, but the third was waving around in the air, fine manipulators at the terminus working.

She looked in vain for symmetry.

She knew she had evolved to recognize symmetry in living things—left-to-right, anyhow, because of gravity. Living things were symmetrical; nonliving things were not—a basic human prejudice hard-wired in from the days when it paid to be able to pick out the predator lurking against a confusing background. In its movements this Prion had the appearance of life, but it was angular, almost clumsy-looking—and defiantly not symmetrical. It didn't fit.

She closed her eyes, felt the texture of the soil, felt her own breath whistle through her nostrils into her lungs. Make it go away, she pleaded. Make it all go away.

It was, Malenfant said, the individual Prion he had come to know as Cassiopeia.

"Oh, really? And how do you know that, Malenfant? The Prion are just spidery robots. Don't they all look alike? How do you know they have individuality in our sense at all?"

Of course he didn't try to answer. He had been places she knew nothing about, encountered the Prion more deeply than any other human. He just stood and let her rant her heart out. Therapy, for one shock after another, one shock too many.

The Prion just stood over her impassively, silent, like the world-crushing robot in *The Day The Earth Stood Still.* Madeleine saw how the pencil-thin cones that terminated its—her—legs were stained green by crushed grass, and a little quasi-African dust had settled on the surfaces of her upper carapace. She was here all right, as embedded in this fake world as Madeleine and Malenfant.

Madeleine bent down and picked up a handful of dirt, peppered with stones. She threw it at the Prion; it pinged off impassive hide, not making so much as a scratch. "You. Robot. Tell me why we're here, what's going on. You've been playing games with us since you showed up in our asteroid belt. No more fucking games."

Malenfant seemed shocked by her swearing.

A corner of her found amusement at that. Here they were hurtling away from Earth at a tad less than light speed, shrunk to quark-sized copies, or else trapped in some alien virtual reality, and he was shocked to hear a priest swear.

He took her arm. "Madeleine—"

The Prion stirred, like a tank turret swiveling. Madeleine thought she heard something like hydraulics, perhaps a creak of metal scraping on metal. And the Prion spoke, its booming voice a good emulation of the human—a woman's voice, in fact, with a tinge of Malenfant's own accent.

She said, NO DOUBT YOU'RE WONDERING WHY I ASKED YOU HERE TODAY.

Malenfant peered up at the Prion. "I taught her *English. Took* a hell of a long time—"

"She made a joke," Madeleine said. "This ridiculous alien robot made a joke."

Malenfant stared at her. Then he threw his hands in the air, slumped back on the grass, and laughed.

Pretty soon, Madeleine caught the bug. The laugh seemed to start in her belly, and just burst out of her throat and mouth, despite her best efforts to contain it, to maintain the pressure on this damn manipulative Prion.

So they laughed, and kept on laughing, while the Prion waited for them.

When they were exhausted, they drank from a stream, and ate fruit, and lay on the grass, letting the tension drain out. Afterward, Madeleine wasn't sure if she had slept, curled up against Malenfant in the grass, like two exhausted kids.

Then the Prion waved a spidery metal limb, and the world dissolved.

It all melted, like a defocusing image: grass and mud and trees and stream and fruit pits, everything but the three of them, two humans and a Prion, and that eerie universe-sun, so that they seemed to be floating, bathed in a deeper darkness than Earth had ever known.

Madeleine reached out and grabbed Malenfant's hand. It was warm, solid; she could see him, the folds on his jumpsuit picked out by the cosmic glow. And she dug the fingers of her other hand into the loamy soil beneath her. It was still there, cool and friable. She clung to its texture, to the feeling of the pull of the fake world sticking her to the ground.

But Malenfant was staring upward, past the Prion's metal shoulder. "Look at that. Holy shit."

It was a ceiling of curdled light that spanned the sky. It was a galaxy.

"It would take a hundred tons of antimatter

It was more complex than Madeleine had imagined. The familiar disc—shining core, spiral arms—was actually embedded in a broader, spherical mass of dim stars. The core, bulging out of the plane of the disc, was a compact mass of yellowish light. Delicately blue spiral arms—she counted them, one, two, three, four, wrapped tightly around the core—were much brighter than the core itself. She could see individual stars blazing there, a granularity, and dark lanes traced between each arm. Here and there she saw flashes of light, blisters of gas—supernova explosions, perhaps, creating bubbles of hot plasma hundreds of light-years across.

There was a surprising amount of structure, she thought, a lot of complexity; this galaxy was quite evidently an organized system, not just some random mass of stars.

The Prion hovered before the image, silhouetted, like the spidery camera cluster at the center of a planetarium.

"So, a galaxy," said Madeleine. "Our galaxy?"

"*I think* so," Malenfant said. "Four spiral arms.... It matches radio maps I've seen. Our Sun is in one of the spiral arms, about a quarter of the way from the center. Which is to say, maybe 25,000 light-years.... Cassiopeia, why are you showing us this?"

The Prion didn't reply.

The galaxy began to rotate, slowly.

Madeleine could see the stars swarming, following individual orbits around the galaxy core, like a school of sparkling fish. And the spiral arms were evolving too, those waves of light churning their way around the disc of the galaxy. But overall the great disc rotated as a unit.

"A galactic day," Malenfant breathed. "Takes two hundred million years to complete a turn. This must be a reconstruction. And...."

And now, Madeleine saw, a new kind of evolution was visible in the disc. Like the pulsing bubbles of supernovae, this was a wave of change that spread out from an individual star, spreading across a small fraction of the disc. The stars went out, or turned red, or even green; or sometimes the stars would pop and flare, fizzing with light.

After some generations of colonization, pressures built up. Resource depletion within the settled bubble led to pressure on the colonies at the fringe. Or else the colonizers, their technological edge over their ancestral homes sharpened by their generations at the world-building frontier, would turn inward on their rich, sedentary cousins.

Either way the cutting-edge colonizers were forced outward, farther and faster; before long, the frontier of colonization, driven by wars and economic collapse behind it, was spreading out at near light speed.

If a colonizing bubble from another species was encountered, there were often ferocious wars. Lesser species, even just a little behind in the race to evolve complexity and power, would simply be overrun.

So it would go on, over millennia, perhaps megayears, a ruthless economic Darwinism. And then—

"And then," Malenfant growled, "it should just keep on going. Sooner or later one of those guys is going to win the wars, cover the galaxy. But not one has made it, across the billions of years of the galaxy's existence. And that is the Fermi Paradox."

The galaxy image continued to rotate, grandly, as if negligent of the blooming, collapsing bubbles of culture and life and mind and death that spread over its carcass.

And now a new image was overlaid on the swiveling galaxy: a spark that flared, a bloom of lurid blue light that originated close to the

to haul an astronaut to Proxima Centauri."

None of the bubbles ever grew very large—Madeleine tried to estimate, given the size of the galaxy itself—no more than a few hundred light-years wide. Sometimes they would collide with other bubbles, and then there might be a great flaring of light along the interface where they met.

But, whether they interacted or not, every one of the bubbles would reach a *maximum width*, and then collapse—not receding, but simply withering away, like a colony of bacteria frying under a sterilizing lamp. One by one the stars would come out once more, shining cleanly out, as the red and green dispersed.

"Life," she said.

"Yes," Malenfant said grimly. "Colonization bubbles. Just like the one we found ourselves caught up in."

The Prion said somberly, THIS IS WHAT WE HAVE LEARNED.

Life was emergent everywhere.

The universe, it seemed, of stars and planets and light and flowing energy, was a hospitable place. Life curdled, took hold, evolved, every place, every nook and cranny it could.

The rise of intelligence was slower. Characteristically it took tens of millions of years—or 50, a hundred—for life to accrue the complexity it needed to start manipulating its environment on a major scale. Still, on world after world, civilizations arose.

Most, said Cassiopeia, were self-limiting. Some were sedentary. Some—for instance, aquatic civilizations, like the dolphins—lacked access to metals and fire. Some just blew themselves up, one way or another.

Maybe one in a thousand cultures developed self-sustaining colonies off their home worlds, and started spreading. Or else they made machines, robots that could change worlds and rebuild themselves, and sent them off into space, and they started spreading.

Either way, from one in a thousand habitable stars, a wave of colonization started to spread.

There were many different strategies. Sometimes the generations of colonists diffused slowly, from star to star, like a pollutant spreading into a dense liquid. Sometimes the spread was much faster, like a gas into a vacuum.

It didn't seem to matter.

crowded core, illuminating the nearby stars for perhaps an eighth of the disc. And then, as the galaxy slowly turned, another, then another, and another still.

Most of these events originated near the galaxy core. Something to do with the crowding of the stars, then. A few, more rare, came from farther out, the disc, or even the dim halo of orbiting stars that surrounded the galaxy proper. Sometimes Madeleine thought she made out structure: great founts of the blue light that gushed back and forth, like the pulp from a piece of soft fruit crushed in some great fist.

Malenfant said, "What are we seeing?"

BURSTS OF GAMMA RAYS. VERY HIGH-ENERGY PHOTONS, INVISIBLE TO THE NAKED EYE.

Malenfant grunted. "We've been observing those damn things all over the sky since the 1960s. We sent up spacecraft to monitor illegal nuclear weapons tests beyond the atmosphere. Instead, we saw these. We never knew how significant they were."

SIGNIFICANT INDEED. THEY ARE STERILIZING EVENTS, MALENFANT.

Their virtual viewpoint changed, suddenly, swooping in toward the galaxy's brilliant core. As the spiral arms spread out above her, dissolving into individual stars which scattered over her head and out of sight, Madeleine cried out, and she clung to Malenfant, who seemed unperturbed by this new special-effects stunt.

She glimpsed structure: a mist of stars, crowded impossibly close, that billowed past her face. And, briefly, beyond the stars, something more exotic: streamers of some glowing gas; a ring structure; a hot, bright bar; the sculptures of gas and light and energy that surrounded the giant black hole at the galaxy's core.

But she was skimmed away from that, like an old-fashioned NASA probe flying by a new moon.

Her attention came to rest, at last, on a pair of stars—small, fierce, angry, glowing inferno red—that stood out before her, against the crowded background of the galaxy center. The stars were close, separated by no more than a few tens of their diameters, and they circled each other rapidly, taking just seconds to complete a revolution. A few wisps of gas circled the two stars, and farther out she saw a lacy veil of color, filmy gas that billowed against the galaxy core; but this was a system that seemed swept clean of planets and other debris. The two stars looped around each other on wild elliptical

paths, like courting swallows, Madeleine thought. But the orbits changed rapidly, visibly decaying into shallower ellipses, neat circles.

"Neutron stars," said Malenfant. "A neutron star binary, in fact."

YES. PERHAPS 50 PERCENT OF ALL THE STARS IN THE GALAXY ARE LOCKED IN BINARY SYSTEMS—TWO, OR PERHAPS, THREE, FOUR, FIVE STARS. SOME OF THESE STARS ARE GIANTS, DOOMED TO A RAPID EVOLUTION....

Malenfant grunted. "Supernovae. Enough energy released to outshine the galaxy for a week."

The Prion said clinically, MOST SUCH EXPLOSIONS SEPARATE THE RESULTANT NEUTRON STARS. ONE IN A HUNDRED PAIRS REMAINS BOUND. THERE ARE ENOUGH BINARY STAR SYSTEMS THAT THE GALAXY MUST HAVE CONTAINED THOUSANDS OF NEUTRON STAR BINARIES ...

Madeleine whispered, "Must have contained?"

... AND MORE EXOTIC OBJECTS. IF THE REMNANT STARS ARE MASSIVE ENOUGH, THEY COLLAPSE INTO BLACK HOLES. THERE MUST BE THOUSANDS OF BLACK HOLE-NEUTRON STAR BINARIES, AND A FEW HUNDRED PURE-BLACK HOLE BINARIES. BUT THESE ARE IRRELEVANT.

Malenfant growled, "Irrelevant?"

FOR THE REBOOT. NEUTRON STAR PAIRS ARE ENOUGH. THE NEUTRON STARS CIRCLE EACH OTHER VERY RAPIDLY. THEY SHED ENERGY BY GRAVITATIONAL RADIATION—RIPPLES IN SPACE-TIME—PERHAPS A FIFTH AS MUCH ENERGY AS THE RADIATION OUTPUT OF A STAR LIKE EARTH'S SUN. DREDS OF METERS OF WATER OR ROCK WOULD NOT BE A SUFFICIENT SHIELD. THE GAMMA-RAY EVENTS LAST ONLY SECONDS. BUT THEY ARE ONLY THE PRECURSOR TO THE MUON CASCADES, WHICH CAN LAST MONTHS. A NEARBY COLLAPSE IS SUFFICIENT TO STERILIZE A REGION PERHAPS A THOUSAND LIGHT-YEARS WIDE. THIS OCCURS INFREQUENTLY, IN A GIVEN LOCATION. BUT THERE ARE MANY BURSTERS IN THE GALAXY CORE.

AND SOME OF THEM ARE VERY DAMAGING INDEED.

Madeleine watched as the galaxy image was restored, and bursts erupted from the crowded core, over and over. Some were exceptionally violent, rare collisions involving three, four, even five objects. Some were damaging because of their orientation, with most of their founting, ferocious energy being delivered, by a chance of fate and collision dynamics, into the disc of the galaxy, where the stars were crowded.

Every hundred-million years or so there was *an event* powerful or well-directed enough to wipe the whole of the galaxy clean.

NO COMPLEX ORGANISM, NO ORGANIZED DATA STORE, CAN SURVIVE SUCH AN EVENT. BIOSPHERES OF ALL KINDS ARE DESTROYED. THE SCATTERED SURVIVORS FIND IT DIFFICULT, IMPOSSIBLE, TO REBUILD.

"And for the rest of us," Malenfant growled, "it's back to the fucking pond."

And so it finishes, Madeleine thought, the evolution and the colonizing and the wars and the groping toward understanding, all of it halted, obliterated in a flash. Thus the old paradox is resolved. This is the equilibrium state for life and mind, a galaxy full of new, young species struggling out from their home worlds, consumed by ignorance and fear and hatred, burning their way across the nearby stars.

"All right," Malenfant said. "So what do we do about it?"

Here and there she saw flashes of light, blis

The stars were growing closer now, their energy ebbing away. The spinning became more rapid, the stars moving too fast for her to see, even though they were still separated by many times their own diameters, by hundreds of kilometers. Madeleine wondered how true the time scales were, how much artistic license the Prion was applying to show them this appalling spectacle.

When the stars were no more than their own diameter apart, at last, there was disruption. Great gouts of shining material were torn from the surface of each remnant, being thrown out into an immense glowing disc that obscured her view.

The stars touched. They imploded, in a flash of light.

A shockwave pulsed through the debris disc, churning and scattering the material, a ferocious fount of energy. But the disc collapsed back on the impact site almost immediately, within seconds, save for a few wisps that dispersed slowly, cooling.

"Has to form a black hole," Malenfant muttered. "Two neutron stars ... too massive to form anything less."

"And that," Madeleine said, "is where the gamma-ray bursts come from."

YES. THERE IS A BURST OF GAMMA RAYS FOLLOWED BY HIGH-ENERGY PARTICLES, COSMIC RAYS, HURLED OUT OF THE DISC OF COLLAPSING MATTER, FOLLOWING THE GAMMA RAYS AT A LITTLE LESS THAN LIGHT SPEED. GAMMA-RAY BURSTS ARE VIOLENT ENOUGH TO BE SEEN IN NEIGHBORING GALAXIES. IN OUR OWN GALAXY, WE EXPECT ONE SUCH EVENT EVERY FEW TENS OF THOUSANDS OF YEARS—MOST OF THEM IN THE CROWDED GALAXY CORE.

Madeleine said slowly, "What damage do these things do? But the Earth is a long way away from the galaxy center...."

FROM AN EVENT LIKE THE ONE I SHOWED YOU, EARTH WOULD RECEIVE—IN A FEW SECONDS, MOSTLY IN THE FORM OF GAMMA RAYS—SOME ONE-TENTH ITS ANNUAL ENERGY INPUT FROM THE SUN.

Malenfant frowned. "It would be like a nearby supernova. The ozone layer would be screwed by the gamma rays. Protein structures would break down. Acid rain. Disruption of the biosphere—"

THE COSMIC RAYS ARE MORE SERIOUS. BATTERING INTO THE ATMOSPHERE, THE RAYS WOULD CREATE A SHOWER OF MUONS—HIGH-ENERGY SUBATOMIC PARTICLES. THESE WOULD GIVE AN IONIZING RADIATION DOSE. THE MUONS HAVE A GREAT DEAL OF PENETRATING POWER. EVEN HUN-

The galaxy image abruptly receded, the spiral arms and the core and the surrounding halo imploding on itself like a burst balloon; Madeleine gasped at the sudden illusory motion.

And now her view was filled with galaxies, spirals and ellipses, and ragged star clouds, island universes in the dark.

Malenfant was pacing, speculating. "There have to be ways, given arbitrarily advanced technology.... Maybe you make a star rocket, use some of the neutron stars' energy to push them apart."

NO SPECIES HAS ATTEMPTED SUCH A THING.

Madeleine said, "If you're allowing yourself arbitrary power, there are cleverer ways, Malenfant. More subtle."

"Such as?"

"Use antigravity. Einstein's cosmological constant, the force that is making the universe's expansion speed up. Or you could interfere with the fundamental constants of physics. For example, there is a particle called the Higgs boson, which gives matter its mass. If you took it away, switched it off ... you could make your neutron stars lighter, and then just push them away. In fact, take all the mass away and they would fly off at the speed of light. Easy. Give me a lever and I will move the world...."

BUT WE DO NOT HAVE ARBITRARY POWER, said the Prion.

"How do you know that?" Malenfant challenged her. "How do you know there isn't somebody out there who can handle *this*?"

WE HAVE SEARCHED. THERE IS NO CIVILIZATION SIGNIFICANTLY MORE ADVANCED THAN OUR OWN, EVEN BEYOND THE GALAXY. IT IS LIKE YOUR FERMI PARADOX, MALENFANT. IF THEY EXISTED, WE WOULD SEE THEM.

IMAGINE A GALAXY WITH ALL THE STARS FARMED, COVERED BY DYSON SPHERES, THEIR PHYSICS ALTERED, PERHAPS TO EXTEND THEIR LIFETIMES. IMAGINE THE GALAXY ITSELF ENCLOSED BY A DYSON STRUCTURE. AND SO ON. EVEN SUCH CLUMSY ENGINEERING, ON SUCH A SCALE, WOULD BE VISIBLE. WE SEE NO SUCH THING, AS FAR OUR AS WE LOOK, AS DEEP INTO TIME.

"So we are alone."

But it wasn't a surprise, Madeleine thought. How long would it take a galactic civilization to rise, even supposing they could survive the wars and despoliation?

Because of light speed, it would take a hundred-thousand years to cross the galaxy once. How many such exchanges would it take to homogenize the shared culture of a thousand species born of different stars and biochemistries, creatures of flesh and metal, of rock and gas? A thousand galaxy crossings, minimum? But that would take a hundred-million years, and by that time the next burster would have blown its top, the next Reboot driven everybody back to the ponds.

The galaxies faded from view. No help there anyhow, Madeleine thought sadly. The world congealed around her: grass and trees and that black sky, all of it illuminated by that point of fierce, blue, cosmic light.

Cassiopeia said, WE HAVE PHILOSOPHICAL GUIDANCE. WE BELIEVE THAT THE UNIVERSE IS FUNDAMENTALLY COMPREHENSIBLE BY CREATURES LIKE US—LIKE YOU, LIKE ME. THAT IS, WE BELIEVE IT IS POSSIBLE AN ENTITY COULD EXIST THAT COULD COMPREHEND THE ENTIRE UNIVERSE, ARBITRARILY WELL. AND WE HAVE A FURTHER PRINCIPLE THAT MANDATES THAT, IF SUCH A BEING CAN EXIST, IT MUST EXIST.

Malenfant frowned. "So what's the catch?"

A MANIFOLD OF POSSIBLE UNIVERSES, OF WHICH THIS IS ONLY ONE.

Malenfant laughed. "So there may be somebody smart enough to know what to do about this. But he may not exist in this universe."

IT IS THE FINAL GOAL OF OUR QUEST.

"But in the meantime, it's just us. Right?"

IT'S JUST US.

Ahead of them, she saw a group of Neandertals. They were dancing, signing furiously to each other, jumping up and down in the light of the cosmos.

Something was changing in the sky, Madeleine thought. That light point seemed to be expanding. Could she see individual stars? "Malenfant, I think we're slowing down."

"So," Malenfant said, "aside from the God of the manifold, who are you hoping is going to save the galaxy?"

The Prion said softly, YOU, MALENFANT. YOU ARE OUR HOPE.

The cosmic light blossomed farther, unfolding like a flower.

Cradling its precious cargo of mind and hope and fear, the Staff of Kintu, a starship just 10 centimeters long, hurtled toward the core of the galaxy, and its destiny.

When the sky unwrapped from that crushed-up point of aberrant light, it turned out to be full of stars.

It was just a wash of dim, pale, uniform-looking stars—the old folk of the galaxy, the most ancient stars—speckled with hot, bright, blue-white points of light, the fiery youngsters who presumably wouldn't be around too long—and beyond that more stars yet, melding into a mistiness like the Milky Way seen from Earth. But there was no sense of structure here, no stripe of light across the sky, like from Earth, no sense that they were looking at a big disc of stars edge-on. They were immersed in light, a place where every corner of the sky glowed about as bright as the surface of the Moon.

The light was eerie: bright but silvery, the colors bleached out of everything. There were no shadows. The grass looked a deep green, the leaves on the trees black.

There was a soft breeze. Malenfant wondered vaguely if there was enough meat in that starlight to fuel photosynthesis, if life could survive on a rogue, sunless planet here, just eating the starlight.

Cassiopeia was standing there, still as a statue like always, the crowded starlight glancing highlights from her dusty carapace.

Madeleine was lying beside him, propped up on her elbows, her face shining like a coin. She said, "We really have come to the center of everything, haven't we, Malenfant?"

"Yes."

And if this truly was the galactic core, they were 30,000 light-years from home—another 30 millennia stranded out of time, with at least 30 more before they could return. Such numbers were meaningless, incomprehensible.

And now Cassiopeia turned, with a scrape of metal, a soft hiss as her pointed metallic feet sank into the loam. MALENFANT. IT IS RISING.

She turned and began to walk across the meadow, with that stiff, three-legged grace of hers, away from the stand of trees.

Malenfant saw Neandertals were following, a shadowy group of them, their muscles prominent in the starlight.

They walked through a sunken meadow. Malenfant walked hand in hand with Madeleine. The grass was cool under his feet, and dew sparkled there, like a fractured mirror of the stars.

They topped a ridge, and looked down over a broad, shallow valley. There were scattered trees and standing water, ribbons and pools of silver-blue light, still and a little eerie.

The Prion, Cassiopeia, had stopped, here at the crest. Malenfant wondered what she was thinking.

The Neandertals had gathered a little ways away, along the ridge, and they were looking out over the valley. But now one of them came shambling toward Malenfant, with that clumsy, inefficient gait. It was a male, a little stoop-shouldered, the flesh over his ribs soft and sagging, and sweat slicked over his shoulders. That great brow pulled his face forward so that his chin almost rested on his chest, his massive neck snaking forward, as if he were peering continually into the distance.

Malenfant said, "Hello, Esau."

Esau slapped him, and his fingers rattled, his fist thumping his forehead. Hello, Stupid.

Malenfant was genuinely pleased to see him again.

But now Cassiopeia stirred, and Madeleine was grabbing his arm. "Malenfant. Look. Oh, shit...."

A new star was rising above the valley, over the newly revealed horizon, brighter than the background.

It was a neutron star.

It was a brilliant point, surrounded by structured, cloudy light. And there was something alongside it, a kind of netting—scoop-shaped, like an unfinished catcher's mitt, facing the star as if endeavoring to get hold of it. But the netting was obviously unfinished, and great holes had been rent into its structure.

Malenfant said, "This is it, isn't it? The source of the next Reboot."

Cassiopeia said, STUDY IT WELL.

"Forget the artifact for now," Madeleine murmured. "Start at the center. You can see the star itself...."

Near the star were multiple lobes of light, containing structure, veins, and streamers that seemed to evolve, slowly. They looked something like the wings of a butterfly, around that ferocious, dwarfed body.

"But they can't be two-dimensional," Madeleine said. "We're seeing a cross-section here of a three-dimensional structure."

"They are like solar flares."

"And that's what we're seeing, I think," Madeleine said. "Giant, unending flares, storms rising from the neutron star's surface. The star has a ferocious magnetic field. The poles are a little ways offset from the star's axis of rotation—"

"Just like Earth."

"Yes. Starstuff is ripped off the star's surface and hurled through space, following the magnetic field lines. But the star is rotating rapidly. The flares and storms are dragged around the star, too fast for us to follow. There are beams, of particles and radiation, being

ters of gas. Supernova explosions, perhaps.

hosed away from each magnetic pole. And as the star spins, the hosing traces out those cones."

"It's a pulsar," said Malenfant.

"Yes. We're talking a lot of energy, Malenfant. You can detect those radio beams from Earth."

Malenfant had grown up with the story. In the 1960s, astronomers had detected an unusual radio signal: a regular, ticking pulse, in step to within a millionth of a second. Staring at their traces, at first they'd toyed with the idea it might be the signature of intelligence, calling from the stars.

"Ironic," Madeleine said. "We thought at first it was a signal from Little Green Men. Little did we know it was in fact a killer of Little Green Men."

Farther out still, the cone-shaped founts of gas lost their structure, becoming dim, diffuse. They merged into a wider cloud of debris which seemed to be fleeing from the neutron star, a vigorous solar wind. It was all but invisible, but still Malenfant thought he saw structure in there, fleeting ripples and shadows, picked out by the complex light of the central bodies.

Beyond the solar wind traces were wider, apparently stationary scraps of color: the lingering remnants of the nebula thrown away from here when this star and its companion had all but destroyed themselves in their giant explosions. And beyond that were only the galaxy core stars, watchful, silent, still, peering down as if in disapproval at this noisy, spitting monster.

Madeleine murmured, "It's beautiful."

"Beautiful but deadly. A spider of light."

THE STAR'S COMPANION IS AS YET SOME DISTANCE AWAY—BILLIONS OF KILOMETERS, IN FACT, TOO REMOTE TO SEE. AND YET THE CONVERGENCE HAS BEGUN, AND IT IS INEVITABLE. UNLESS—

If this truly was the galactic core, they

"Unless somebody does something about it."

TELL ME YOUR IMPRESSIONS.

They turned to see better that strange net-like artifact, which continued to ride higher in the sky, a filmy, complex moon.

It was a net, cast across the stars. Malenfant found it impossible to believe it wasn't a few centimeters above his head, something small and close he could just reach out and touch. The human mind was just not programmed to see giant planet-spanning artifacts in the sky.

Think of an aurora, he told himself, those curtains of light, rippling far above the air you breathe. And now imagine that it would hang there far beyond any aurora, suspended in space, perhaps beyond the Moon....

Madeleine said, "It's broken."

IT HAS A PURPOSE HERE. YOU WOULD CALL THIS A SHKADOV SAIL.

It would be a thing of matter and energy, of lacy rigging and magnetic fields. It would be a screen that would reflect the neutron star's radiation, and much of its solar wind. But it was bound to the star by invisible ropes of gravity.

"Ah," Madeleine said. "You disturb the symmetry of the radiation, of the solar wind. You see, Malenfant? The wind from the star will push at the sail. But the sail isn't going anywhere, relative to the star, because of gravity. So the wind gets turned back."

"It's a stellar rocket," Malenfant said, "using the solar wind to push aside the star."

THAT IS THE PURPOSE. WHEN COMPLETE IT WILL BE A DISC A HUNDRED-THOUSAND KILOMETERS ACROSS, ALL OF IT LACED WITH INTELLIGENCE, A DYNAMIC THING, CAPABLE OF SHAPING THE WIND, RESPONDING TO ITS COMPLEX CURRENTS....

"When complete," Madeleine said dryly.

YES.

Malenfant frowned at the huge, unlikely structure. "Can a sail like that really move an object more massive than the Sun?"

THE THRUST IS VERY SMALL, THE ACCELERATION MINUSCULE. BUT OVER LONG ENOUGH PERIODS, SMALL THRUSTS ARE SUFFICIENT TO MOVE WORLDS. EVEN STARS.

"And will that be enough to stop the coalescence of this binary, to stop the Reboot?"

NOT TO STOP IT. TO POSTPONE IT GREATLY, BY ORDERS OF MAGNITUDE.

"Hundreds of millions of years," Madeleine said. "You'd have to maintain that damn thing for hundreds of millions of years, to make a difference."

YES. WE ARE NOT ADVANCED. WE CANNOT PUSH STARS AROUND AT WILL. THIS IS THE BEST WE CAN DO. BUT IF WE CAN POSTPONE THIS STERILIZATION EVENT—

"It might provide time," Malenfant said. "Time for everybody to get smart enough, to figure out a better way to do things."

Madeleine asked, "Who is building this thing? You?"

NOT US ALONE. WE DO NOT KNOW WHO STARTED IT. IT APPEARS TO HAVE BEEN A RELIC FROM A PREVIOUS CYCLE, FROM BEFORE A PREVIOUS REBOOT—

"Like the Saddle Point network."

YES. MANY RACES HAVE COME HERE, COOPERATED ON ITS CONSTRUCTION. BUT THERE IS CONTROVERSY.

Malenfant glared up at that filmy structure. There was damage: holes in the netting you could have passed a small planet through. places where thousand-kilometer threads seemed to have been burned or melted or distorted.

"Wars have been fought here," he said.

Cassiopeia paused, as if indulging in some robotic sigh. THAT IS TRUE. THE RACES OF THE GALAXY ARE VERY DIVERGENT. SOMETIMES A RACE WILL SEEK TO TAKE THIS TECHNOLOGY AND USE IT FOR ITS OWN PURPOSES. THE OTHERS MUST MOUNT A COALITION TO STOP THEM. THERE IS USUALLY DAMAGE, AND A DISRUPTION TO THE PROJECT, EVEN TEMPORARY ABANDONMENT. SOMETIMES A RACE WILL SIMPLY ATTEMPT TO IMPOSE ITS WILL ON OTHERS, WHICH USUALLY ENDS IN CONFLICT, THE EXPULSION OR EXTERMINATION OF THE AMITIOUS.

Malenfant grunted. "Sounds like every construction project I ever worked on."

Madeleine said, "But what about the time scales, Cassiopeia? How can any species remotely like us, or even you, maintain a consistency of purpose across hundreds of megayears? None of us even existed in anything like our present forms so long ago."

WE CANNOT EXPECT CULTURAL CONTINUITY OVER SUCH ENORMOUS TIME SCALES, EVEN GIVEN SPECIES CONTINUITY. TO THE REMOTE DESCENDANTS OF THOSE WHO INITIATE SUCH A PROJECT, IT MAY COME TO SEEM INCOMPREHENSIBLE. A MONUMENTAL FOLLY.

"Like the pyramids."

... BUT, Cassiopeia said slowly, WE MUST TRY.

"It's a children's crusade," said Madeleine softly.

Malenfant was starting to feel scared, drawn out, as if pulled into space by the thing in the sky, that was still rising, up toward the zenith.

He asked, "What is it you want of me?"

But here was old Esau, grinning from one side to the other of his flat face, deep eyes full of starlight. He was signing: the fist to the forehead, then left palm flat upright, supporting the right fist, which was making a thumb's-up gesture. *Hey, Stupid. I'll help you.*

What, help me what what?

Forefinger and middle finger together, on both hands, held out like a knife; a sharp chop downward, a stark, unmistakable sign. *To die.*

A last day. a fake night. Elements of humanity. He clung to Madeleine.

'What about you?" The last of humanity, overwhelmed by the war, were huddled in the caves of Mercury. "Will you go home?"

Madeleine frowned. "I'm not a good huddler. Even if, after all this time, there are still humans like me. And besides—"

"Yes?"

"Besides, I want to see how far I can go. Think about it, Malenfant. What if we—the sentients of the galaxy, of this generation—do manage to come through the next Reboot? What if this time we don't have *to go back* to the fucking ponds? What if we get a chance to keep on building? If I keep on rattling around the Saddle Point gateways, maybe I'll get to see some of that."

"Beaming between the stars, while the network gets extended. Onward and onward."

"Yeah." She glanced up. "Maybe I'll get to see Andromeda, before I die. Or maybe not."

"There are worse ambitions ..."

The Prion stood before him.

It was time.

Madeleine clutched at his hand. But he pushed her away. He was going to have to face this alone.

Malenfant sat before Esau on the hillside. By the light of galaxy-center stars, he watched Esau knap a tool out of a core of what looked like obsidian, a glassy volcanic rock. He wondered if Esau had brought it from Earth through the Saddle Point gateway, or if he had somehow dug it out of the illusory ground, here on this starship of earth and rock and trees and grass. He didn't suppose it mattered.

WE ARE ALL LAYERS OF REPLICATORS, MALENFANT. ALL LIVING THINGS. YOUR OWN GENES ARE MOLECULAR REPLICATORS. YOUR BODY IS A COOPERATIVE VENTURE BY MEANS OF WHICH YOUR GENES CAN MORE EFFECTIVELY REPLICATE, AND PROPAGATE. MY DESIGN IS DIFFERENT. BUT THE PHILOSOPHY IS THE SAME. I AM REPLICATOR CONSTRUCTED OF MORE REPLICATORS, A FRACTAL DESIGN, REPLICATORS DOWN TO THE MOLECULAR LEVEL....

Esau gave him a fresh lump of obsidian, and hammers of bone and rock. He dug out a fresh core for himself, and signed bluntly to Malenfant. *Same as me, Stupid. Do same as me. Copy.*

So Malenfant, obediently, set to work, tapping clumsily at the rock, emulating Esau's movements, this most ancient of human crafts, 30,000 light-years from home.

"The Buddhists have a doctrine of *anatta*," Madeleine whispered. "It means, no self. Or rather, the self is only temporary, like an idea or a story. The Buddha once told his monks: "Actions do exist, and also their consequences, but the person that acts does not."

He tried to bury himself in the tasks. He focused on the work, the movements of his hands and arms. He would think about Madeleine—and put the thought aside. The differences between his own hands and the Neandertal's, so supple and graceful in their way, struck him, frustrating him with his own clumsiness. But he must put aside that thought too.

YOUR RELIGION IS THE KEY. OR RATHER, YOUR PROPENSITY FOR RELIGIONS.

CONSIDER A RELIGION AS A COMPLEX OF IDEAS, OF MYTHS, REINFORCED BY THREATS AND PROMISES, BEAUTY AND TERROR. AND FOR THESE UNTESTABLE MYTHS, HUMANS HAVE, OVER AND AGAIN, BEEN PREPARED TO SACRIFICE THEIR LIVES.

DEATH AFTER A FEW MERE DECADES OF LIFE IS A TERRIBLE THING, MALENFANT, IN A UNIVERSE WHICH MAY LAST TRILLIONS OF YEARS. AND YET HUMANS CHOOSE IT VOLUNTARILY, FOR THE SAKE OF AN IDEA. AND WITH EVERY DEATH, THAT IDEA GROWS STRONGER.

WE HAVE ENCOUNTERED MANY SPECIES ON OUR TRAVELS. RARELY HAVE WE ENCOUNTERED SUCH A FAITH.

For brief periods, he got it.

It was as if he saw the stone, the tool he was making, with a kind of stunning clarity, every detail of it more real to him than his own past and future: the thing itself, not the geologic processes that had produced the raw material, not the mysterious interplanetary gateways that had brought him and the stone to this place, not even the tool's ultimate purpose. Just the thing, and the act. It was a smooth, rolling, fleeting form of awareness, without past or future, memory or anticipation.

But then the spell would be broken, and plans and analyses and self-consciousness would return to clutter up his head, an awareness of Madeleine and Cassiopeia, and Esau, the trees and grass and the heart of the galaxy.

"You have to let it go, Malenfant," Madeleine whispered. "Don't think. Live in the now, the present moment. If ideas come up, reflections, memories, hopes, fears, let them go. Butterflies, flitting out the window. Treat everything equally. Don't filter, focus. Watch Esau...."

Esau, yes.

Where Malenfant was like an observer—controlling the motions of this decaying robot he called his body—the Neandertals were immersed in their world, their bodies and minds united in a way his could never be. When Esau worked a rock, he was that rock in its deep chthonic richness, in a way Malenfant perhaps could never be, his identification of the rock barely separated from the thing itself.

ANOTHER LEVEL OF REPLICATOR IS AT WORK IN HUMANITY. THESE REPLICATORS ARE IDEAS, AND THE MEDIUM THEY INHABIT IS THE HUMAN MIND.

THE IDEAS GROUP TOGETHER, COMPLEXES OF IDEAS THAT REINFORCE EACH OTHER, MUTUALLY AIDING REPLICATION. A RELIGION IS A COMPLEX OF IDEAS WORKING TOGETHER IN A COHERENT FASHION, DESIGNED—BY SELECTION—TO PROPAGATE RAPIDLY INTO AS MANY MINDS AS POSSIBLE, AND TO CROWD OUT COMPETING IDEAS. THE IDEA VIRUSES ARE NO MORE CONSCIOUS THAN A STRAND OF BIOMOLECULE; THEY HAVE NO MORE DELIBERATE PURPOSE. ALL THEY SEEK IS TO REPLICATE. AND YET THE REPLICATING IDEAS HAVE CONTROLLED YOUR EVOLUTION, JUST AS HAVE YOUR REPLICATING GENES.

OFTEN THE REPLICATORS COMPETE. THE IDEAS DEMAND LARGE, ENERGY-EXPENSIVE, BIRTH-THREATENING BRAINS. WE BELIEVE CREATURES LIKE YOU ARE RARE BECAUSE OF THE FUNDAMENTAL CONFLICT BETWEEN THE REPLICATORS.

PEOPLE LIKE YOU WIPE YOURSELVES OUT.

WE FIRST REGARDED YOUR REPLICATING IDEAS AS A POSSIBLE CONTAGION, TO BE AVOIDED. NOW WE HAVE A DIFFERENT VIEW....

The most fundamental idea complex was the sense of self.

A self was a collection of memories, beliefs, possessions, hopes, fears, dreams. All of them ideas, or receptacles for ideas. If an idea accreted to the self—if it became Malenfant's idea, to be defended, if necessary, with his life—then its chance of replication was much stronger.

Malenfant's mind was no more than an uneasy, temporary coalition of warring idea-viruses. And his sense of self, of himself, was an illusion.

The Neandertals seemed to have no sense of self. The Prion didn't. Most of the galaxy's races didn't either, it seemed. And they got along fine without it.

But they couldn't handle the Reboot prevention project.

Only humans, it seemed, slaves of replicating ideas, might be strong enough, crazy enough, for that.

To help Cassiopeia, to save the galaxy, Malenfant was going to have to become Neandertal, become Prion. He was going to have to lose himself ... and find himself again.

Esau held out broad, hairy hands, and Malenfant took them.

were 30,000 light-years from home.

Madeleine was still talking, but he could make out no words. She was receding, as if dissolving.

Goodbye, goodbye.

He closed his eyes.

... No, it wasn't like that.

His eyes closed.

There was a pink flash, a moment of searing pain—

Limbs that worked. Tactile, graceful. Tasks that were progressed.

The rope: complex, multilevel, a thing of monomolecular filaments, superconducting threads within. The extension of the rope, the repair of breaks, the tasks of the limbs.

Visual receptors, eyes. A repositioning. Data nets above, below, all around, a great curving wall. At extremes, a flat-infinite plane, in every direction. Above, the spitting neutron star, its envelope of gas.

Here, a body, a spider-like form of many limbs, a dodecahedral box at the center. Multiple tasks for those limbs. The net that was repaired, extended; the body that was maintained, adjusted, itself extended; records that were kept; a mesh of communications with others that was maintained, extended.

Others. Some near. Some far. Some as this body, a common design. Millions of them. Some not. Here with tasks that were progressed.

Vibrations, the shudder of torn threads, in the structure. Complex modes, wave forms in space and time.

War, in a remote part of the net.

A position that was adjusted, an anchoring that was improved and secured.

Have courage, he told himself/themselves. We have a noble goal. Our death doesn't matter. The future, the children ... even if they are not our children. That is what matters. We will prevail.

He would reach out to others, working here. Infect them.

Convert them.

This was, after all, a crusade.

The net shuddered again. That damn war.

Malenfant sighed, metaphorically. You don't have to be crazy to work here, but it helps, he thought sourly.

Not millions of years, anyhow. How long? Centuries, millennia? Not long, really. Then you can rest, Malenfant. Then you can rest.

Clinging tight, he looked for a safer place.

And he sought his first disciple.

The Gaijin colony lies quietly beneath its translucent bubble, the beveled edges of the buildings making the little city look like a scattering of half-melted toys. Beyond the bubble an airless, desolate plain stretches to a clean horizon. Shadows rake the plain.

Looking up, I trace the quasar's fantastic geometry.

The powerhouse at the quasar's heart, barely two hundred light-years away, is a pinpoint of unnatural brightness. Twin sprays of electron flux tear from the poles of the powerhouse, straining to zenith and nadir. And swaddling the waist of the quasar is a torus of glowing rubble.

This colony world orbits almost within the torus, so that the debris looks like a pair of celestial arms reaching around the powerhouse to touch the fake clouds nestling under the bubble.

I have travelled a billion light-years.

The work that was progressed in one part of the net, war in other parts.

The anchoring. The self-maintenance. The work. The universe, of tasks, of things. No center.

... And he felt as if he were drowning, struggling up from some thick, viscous fluid, toward the light. He wanted to open his mouth, to scream—but he had no mouth—and no words. What would he scream?

I.

I am.

I am Malenfant ...

No. Not just Malenfant. Malenfant/Esau/Cassiopeia.

The shuddering of the net. The anchoring. The work that was progressed ...

No! More than that. I feel the shudder. I must hold on; I must continue the work, in the hope that sanity will prevail, the conflict resolved, the work continued, the greater goal achieved.

Thus it must be.

Terror flooded over him. What was he now?—a partial personality, downloaded into a clumsy robot, clinging to this monstrous structure, bathed by the lethal radiation of a neutron star?

When was he? How long had he toiled here, awake but unaware?

And even now the robot he rode was working, knitting away at the net. This body was working, without having to be told, directed, by me, or anybody else.

But that's the way it is, Malenfant. You've always been a passenger. It's just that now, it's a little more—explicit.

Welcome to reality.

And this was it, for millions of years?

You went too far this time, Malenfant.

Have faith, he told his other parts.

But that was the problem. They didn't have faith. Faith was a dangerous idea. The only thing less dangerous, in fact, was the universe itself, this terrible Rebooting accident of celestial mechanics.

It is glorious, astonishing.

I have traveled a billion light-years from Earth, across the curve of the universe.

I wasn't aware of it. I suppose I was in store, or bouncing from gateway to gateway without downloading, ever since.

It was a test, that was all. Assuming I woke up again—assuming I found myself here, in quasar light—then I would know, it would be proof, that humans and their allies, or rivals anyhow, had beaten the countdown clock, had burst out of the limits of the galaxy, and gone on.

And if they had got as far as this, they must be everywhere. Hell of a thought.

Malenfant, you did it. Guess I'll never know how.

The quasar dips to the horizon now; optical filters in the bubble around me soften its shape, turning it red. The electron flux is splayed across the sky like brush-marks on velvet. The sky is full of icosahedral frameworks, triangular faces glimmering, drifting like angular soap bubbles.

I look to the zenith; a scattering of galaxies glimmer through my bubble.

The galaxies glow green, every one of them. Life everywhere. Triumphant.

I am a billion light-years from home. Everything I knew is buried a billion years in the past.

Earth's biosphere could not survive so long as this. Humans must have fled, or become extinct. Perhaps I am the last human. Perhaps I am, by now, a construct of alien qualia; perhaps I'm not even human any longer myself.

Well, I don't have to face that. Not yet.

The last traces of quasar light touch the sky like cool smoke. It is so beautiful it hurts.

In luck again. Always did want to see a quasar.

So where to now, Madeleine?

I smile. I have all the time in the world to figure it out. □

With the Earth destroyed, only the Moon children could bring it back to life.

agents of the Moon

BY JACK WILLIAMSON

1.

SEARCHING EARTH FROM HIGH ORBIT, WE found most of Africa still sullenly red with the alien stuff that had spread to ring the Mediterranean lakes and on north to the ice. The Americas were mottled with something just as strange. Over Asia, where our colony had been planted, the retreating ice lay white from the pole to the Himalayas. The south was green with the life we had sowed, but we heard no radio, saw no city lights when the continent turned away from the Sun.

Arne Linder ordered us back to the Moon.

"Give it up and get back here. No lights and no radio means there's no electricity. No high technology. No civilization. Something has killed the colony. Killed Mona and Casey. It can kill you. You may feel expendable, but Tycho Station isn't. We've lost one plane. I don't want you wasting another."

In a sense, we were expendable. The station had been set up on the eve of the great impact that wiped most life off Earth, its mission to terraform and reclaim the devastated planet. Its brain was the master computer, its hands the robots that rebuilt themselves and maintained

everything, its womb the maternity lab, where it had cloned us again and again from the frozen cells of the survival team.

No simple task. The impact left the shattered planet hostile to life of any sort. The first colonists endured a bitter struggle for survival long enough to build a new civilization at the mouth of the Nile. Alien invaders crumbled their world to malignant dust. The computer slept through a long ice age before it cloned a new generation to replant terran life on southern Asia and try again.

The fate of the second colony was our problem now. Dropping out of orbit to land in the Vale of Kashmir, their spaceplane had gone silent. The computer slept for centuries and cloned us again to look for them and plant a new colony if they had failed.

Casey and Mona volunteered to go. Casey's clone father had been a guard at the Moon base in old New Mexico. A thick-set man with the flags of Mexico and Chino and the name "El Chino" tattooed on his black chest, he had forced his way aboard the escape plane just before the shockwave struck, Mona with him. She was a slim blonde with long pale hair and a dancer's gliding grace. Now they were long ages dead, but DeFort had saved their cells for the gene pool. Although we knew them only from their images in the holo tank, Casey and Mona grew up full of a fierce pride in them and saw the expedition as their best chance to earn a rightful place on the mission.

"No lights and no radio means there's no electricity. No high technology. No civilization. Something has killed the colony."

Almost a year had gone since they took off. Calling back from high orbit before their descent to land in the Vale of Kashmir, they had seen no sign of the colony. Their radio went silent as they dropped into the stratosphere. When Pepe and I wanted to follow, Arne called us suicidal fools, but we got the computer to equip another spaceplane for us. We had now been three weeks in orbit, still with nothing to report.

"Arne!" Pepe looked up at me from the pilot's seat, a hard slant on his lean, brown jaw. "He wants to be the alpha male, but he's afraid of everything. I say we go on down. If you're with me, Dunk?"

I'm Duncan Yarrow. My clone father had been a friend of DeFort's long before the impact, keeping his records while he built Tycho Station. Generation after generation, I have been the station historian. Pepe has always been my closest friend, and I think I cared for Casey and Mona as much as he did.

"OK," I told him. "Let's look."

On our last low pass across Asia, he sat glued to his binoculars.

"Alive!" He shouted at me, suddenly elated. "They're alive!"

He was busy with the controls. I had to wait for half-a-dozen anxious minutes before he spoke again.

"Lines!" His voice was quick and sharp. "I see a web of narrow lines spread over the Indian subcontinent and on east into China. Roads? Maybe railways? I think we're finding civilization."

"Civilization? With no electricity?"

He shrugged. "We used to make do without it, before Faraday and Edison."

Seen from space, the Vale of Kashmir was a tiny green oasis nestled into that towering barrier of saw-toothed peaks that held back the Siberian ice. He raised the binoculars to study it again and turned to grin happily at me.

"The valley does look inhabited. The roads converge toward it. I make out rectangular patches that must be fields. And there! In the middle of the vale!" Again I had to wait. "That has to be a city!"

Air-braking on the final pass, we sloped down to land. I needed no binoculars to find roads and green fields and scattered villages as the valley opened wider and wider beneath us. The city made an odd target pattern, the bull's-eye a white spot at the center of a green oval space. Rings of red and green and gray around it became curving streets of red-roofed buildings.

We came down to that white spot on a cushion of roaring steam. Pepe killed the jets and opened the door, which swung down to make a narrow platform. Outside, we stood lost in awe. Pepe's hand was shaking when he gripped my arm. Our whole world had been the tiny nest of tunnels in the crater rim and the dome above them that looked out across the bleak and colorless Moon to a dead-black sky. The vale was overwhelming.

"*Que grandissimo!*" Pepe liked to use his father's Spanish. "*Que marveloso!*"

The wonder of it dazed me. A sky not black, but dazzling blue. A huge white mushroom suspended in it. I shaded my eyes to look again.

"A cloud!" Pepe nodded at it. "That's a cloud."

The station had been a tiny dot of life on a world that had never lived. Here we stood outside in open air, gazing out across a sea of red rooftops toward a landscape vividly green. I felt cool wind and warming Sun, inhaled sweet scents I had no words to name. A dark fleck soared overhead, trilling music. A songbird?

I breathed deeper and peered at everything. The open oval was a great arena, rimmed with seats. Buildings walled it, only three or four stories tall but solidly made of some white stone. Far beyond, the valley floor sloped up to dark-green forest. Farther still, bare cliffs climbed high to sunbright slopes of ice.

"Wouldn't Arne be surprised!" Pepe grinned. "The aliens that frighten him never built this."

He handed the glasses to me. Toward the south, I found a cluster of tall stacks, smoke trailing from them. Off in the distant east, I saw a dark line creeping across a high, green slope, a trail of smoke above its head.

"A train." I gave the glasses back. "They do have steam."

"Although they lost electricity?" He frowned and raised the glasses. "They must have had hard times. But they survived— " He froze. "Look at that! Casey's plane, painted red!"

A hundred yards off, I saw another tall rocket craft. Red paint fading, bare metal gleaning on the nose, it stood on a second white landing pad. He looked through the glasses and shook his head.

"No such luck. That's older. I see gaps eroded in the hull. It must be the plane the colonists came in, four hundred years ago." He lowered the glasses to frown at me. "It means the colonists *remember* where they came from. With this pad ready, they could be expecting us."

He pushed the glasses at me and moved to unfold the landing stairs.

"I'm going down to meet them. And ask whether Mona and Casey got here."

"Not yet!" I beckoned him back. "We don't know we're welcome. Let's leave the first move to them."

I took the glasses and found people on rooftops around the arena. Only a handful at first, but more already appearing. Men in jackets very much like my holo father's. Men in brightly patterned shirts. Women in slacks, women in skirts, women with babies in their arms. Quiet children neatly uniformed in white and blue. I heard a rising hum of voices.

"They're our colonists. Our kin." Yet his voice sharpened uneasily. "Children of our clones?" Frowning, he reached for the glasses, shook his head, and grinned with relief. "None of them looks like you or me."

A wide gate was opening in the side of the arena. An odd little vehicle came out. Pepe lifted the binoculars. I heard a sharp catch of his breath, and he handed the glasses to me. What I saw was a rickshaw, with two high wheels and a man on the seat between them. What

held my eye was the man who pulled it. Naked to the waist, he was black as Casey. He had the same high cheeks and the same almond eyes, and a bright black bead on his forehead.

"Casey!" Pepe whispered, his face gone bleak.

"Or another clone of El Chino's?" I said. "The colonists had hundreds of cell specimens from all the races, but perhaps they also cloned themselves."

"*Whatever* they did— " Pepe made a bitter face. "I don't think I like it."

The passenger was a lean little man in silver and gray. He sat staring up at us while the rickshaw made a slow circle around us. Running hard, the black man kept staring straight ahead with never a glance at the plane or us. I studied the dark Chinese face again, and found a thin red stain around the small black bead on the forehead.

The rickshaw stopped below our platform. The passenger stepped off his seat, bowed toward us, dropped to one knee for a moment, and stood again, shading his eyes as if blinded by the Sun on our bright metal.

"Are you Agents— " His quavery shout caught, and he began again. "Are you Agents of the Moon?"

"We come from Tycho Station."

"Welcome to the Kashmir Regency." His knobby Adam's apple rose and fell as he swallowed. He caught another nervous breath and went on. "I am Thomas Drake, secretary to Deputy Regency Agent Eric Frye. I greet for Regent Arne, Agent of the Moon. We beg you to remain on your craft until a proper reception can be arranged."

I looked at Pepe.

"Why not?" He made a sad face and shrugged uneasily. "Let's play their game."

He turned silently to wait until Drake called again.

"The Deputy Agent will be honored to receive you. He regrets the inconvenience of this slight delay, but preparations for your reception must be completed." He raised his wrist to consult a bulky timepiece. "I'll be back within two hours with transportation for you."

He looked up, waiting. Pepe said nothing.

"Please thank the Regent," I called. "Tell him the honor is ours."

"Honor!" Pepe muttered under his breath. "I don't think so."

Drake knelt to us again, ceremoniously, and got back on the rickshaw. The black man ran with it back through the gate. Pepe lowered the landing stairs and focused the glasses again as we waited.

"Look there!"

He gripped my arm and pointed. A young woman came riding a bicycle out of a narrow doorway on the opposite side of the empty arena. Her blonde head low, she pedaled rapidly toward us.

"Mona!" he whispered. "Or Mona's clone!"

2.

SHE STOPPED JUST BELOW OUR PLATFORM, STEPPED off her bicycle, and looked up at us. Pepe shook his head and gave the glasses back to me.

"No, she isn't Mona." His voice fell in disappointment. "She has the same blue eyes, but not Mona's chin."

She leaned the cycle against the side of the stairs, started up toward us, and paused to stare. In slacks and a neat green jacket, head bare and honey-colored hair cut short, she looked as enchanting as I thought the young Mona must have been when she came out of the east American hills to sing and dance for the ill-fated Earth. Nothing was wrong with her chin.

"May I climb up?"

Pepe grinned at her. "You're halfway already."

I stepped back into the doorway to make more room. She came up with us, flushed and a little breathless from her ride. She stood a moment staring at us, blue eyes wide with excitement.

"You are immortals?" Her voice was hushed with awe. "Truly immortals from the Moon."

I left the answer to Pepe. He simply grinned at her, looking more breathless than she was.

"I know your picture from the history books." She studied his face. "You are Space Pilot Pedro Navarro."

"Just call me Pepe."

She looked at me. "You—you must be Dr. Yare? I know your writing of the immortals. The great epic of the impact and the restoration. Although many call it fiction I never understood how you became immortal."

"We aren't," Pepe said. "Only clones. But Dunk and I are from Tycho Station, on the Moon."

"If you really are!" She was flushed with emotion. "We've been waiting four hundred years, but I never really expected you now." She stopped to catch her breath and her gaze grew sharper. "If I may ask you to talk— "

"OK," Pepe said. "We're talking."

"OK?" She frowned. "Your words seem odd."

"So do yours." He grinned. "But let's talk."

She reached into a brown leather purse slung over her shoulder and turned to hand him a small white card. "I'm a watchbird," she said, "for *New World Reporter*. I have questions."

He examined the card and handed it to me. "What's a watchbird?"

"A writer of events." Her name on the card was Laura Grail. "Your coming is a historic event. Here is my great question." She looked searchingly at me and back at Pepe. "Do you bring a warning for our world?"

"Warning?" Pepe shook his head, with a puzzled shrug. "No warning at all. We came just to survey the colony and report to the computer at the station. Your history. Your progress. Your problems, if you have problems. And most important to us, to find out what became of the survey party we sent last year."

"No warning? You are certain?" She looked closely at me and back at him. "Don't you search the sky for danger?"

"The computer does."

"You see no threat of another impact? No great object coming out of space to strike the Earth?"

"Nothing at all." She seemed to relax, and Pepe went on, "Here is our own big question. About our lost expedition. Two of our people left the Moon not a year ago in a craft like this one."

She gave him a blank glance and shook her head, stepping back to look up in wonder at the shining silver tower of our hull.

"They planned to land here in this valley." He gestured at the ice-crowned mountains that walled us in. "Do you know if they arrived?"

"I never heard—or maybe— " She blinked in a startled way. "There was a story nobody believed. An escaped slave who told the ridiculous tales such men invent. He claimed to be an immortal from the Moon."

"Only one?"

"A man and a female fugitive. Bounty hunters found them hiding on the ice."

"What happened to them?"

"Nothing unusual. Slaves escape. If no owners are found, they go to public auction."

"The woman?"

The girl turned from him to listen to the sound of distant music from somewhere beyond the open.

"I shouldn't be here." She frowned at the watchers on the rooftops and glanced uneasily around the empty field. "I must go."

"Not yet!" Pepe begged her. "We just arrived. We're desperate for answers. Everything is strange to us. Even the weather." He grinned at Laura Grail, trying to detain her, and gestured beyond her at the shining peaks, the indigo sky, the towering cloud. "On the Moon we have a hot Sun and bitter nights, but no weather."

"It's spring." She stared at our distorted images reflected in the ship's ceramic skin and reached curiously to feel it. "Summer will be warmer, but we often have snow in the winters." Her voice quickened. "For the *Reporter*, may I ask about your plans here?"

"First," Pepe said, "we need help to locate our people. If they were that fugitive slave and the woman with him."

Her face grew grave.

"Slaves lie. The man spoke of a Moon ship that crashed on the glaciers, but no report of such a ship ever got past the censors. I advise you to forget the story."

"Is there a reason to forget?"

"The Scienteers." Gravely, she nodded. The watchers on the roofs were far away, but she still hushed her voice. "I should not have come here. If you are ever asked, you must not speak of me. Or speak of anything I say. Talk of Agents of the Moon could put my life in danger."

"Not a word," he promised. "Cross my heart."

She looked puzzled.

He crossed his heart and asked, "What are Scienteers?"

"Enemies of the Regency." Almost whispering, she stepped closer. "They call it a fraud and claim to be the only true Agents of the Moon. Bounty hunters are employed to hunt them down. They are killed or fed to the riders."

"You say the slave and the convict were taken for Scienteers?"

"Perhaps." She looked uncomfortable. "Such events are never published. And please understand. I don't malign the Regent. He has greater problems than the Scienteers."

"Yes?" Pepe asked. "Problems?"

"Everywhere. Rebels in America. Failure on the African front. Treason here at home. And he's no longer young."

"Are we another problem?"

"None from the first century, accepted as authentic. The facts are all in question. Wars have been fought over tales nobody can prove. Scienteers have been burned for what they believe."

"You yourself, what do you believe?"

She flushed and bit her lip.

"You should not ask such questions."

"Forgive me," he begged her. "What does anybody believe?"

She stood silent a moment, thoughtfully frowning, listening to the music from beyond the gate.

"OK," she spoke at last, testing the new word. "Ask the Regents. Ask the Scienteers, if you can find one. The Regents like to call this field a holy spot. They believe that old spacecraft still stands where it landed. They have kept this space clear for a new craft to land here. Officially they are eager to welcome new Agents from the Moon." She hesitated and dropped her voice again. "Privately, I imagine they might prefer for things to stay as they are."

"The Scienteers?"

"They doubt the official story. As that goes, the immortals quarreled after the landing, and fought for command. Arne Linder killed his male companions and had a natural son by the Immortal Dian. The son became Arne the First, legitimate founder of the dynasty."

The station had been set up on the eve of the great impact that wiped most life off Earth, its mission to reclaim the devastated planet.

Again I heard music from somewhere off the field, perhaps a military march. I saw her hands twist together as if in anxiety, but she smiled uneasily at Pepe.

"You should be safe," she told him, "unless you are taken to be Scienteers."

"We are not," he assured her. "But we need to know all you can tell us about what not to say. What not to do. We are waiting for a reception. What does that mean?"

"A great honor, if you are really from the Moon."

"What can we expect?"

"Questions, I'm sure." She frowned, considering. "You should speak with care. The Regent sometimes has strange ideas. And strange advisers."

"Can you tell us more about him? About the history of the colony? About the situation now?"

"In the time I have." The military music rose again, and she glanced uneasily toward the gate. "If you will not speak of me."

"We'll say nothing." Pepe offered his hand. I wondered if a handshake still had meaning here, but she smiled and gripped his hand. "We need your help and we are grateful for it. If there are questions, what would they be?"

Listening to the voices from the rooftops, she stepped closer to him.

"The Regent may want proof that you are actual Agents of the Moon."

Thinking, she paused to brush the fair hair off her face. "He may ask if you have a message from the immortals. He may ask if you bring help from them. And— " She frowned. "I never said so, if anybody asks, but he may fear that you threaten his authority."

"We didn't come to meddle."

"Our readers— " She paused again to listen. "They'll be asking for any kind of message, if they believe you're really from the Moon."

"I suppose you can tell them that Tycho Station still exists to continue its original mission. That is, to repair the damage of the great impact and restore the civilization of Earth."

"If that's true—if the Regent believes it—he should welcome you. The Scienteers have never been certain of Tycho Station. They have suspected that it is only a myth, invented by the Regents to support their authority."

"Don't you have records?"

"The Scienteers have another story?"

"The truth is hard to know, because old books and manuscripts are rare, perhaps destroyed by the early Regents. The Scienteers have claimed that the colonists made a safe landing, but too high in the valley. Avalanches caught all three men off the ship. The women survived to build the first maternity lab and clone new children. The Scienteers have denied that the Regents carry any natural immortal blood. That is the heart of their treason."

"That's our Arne." Pepe grinned at me. "He always had to be the top dog."

"Take care!" she warned him. "Care with what you say."

"Give us more history," he told her. "If our ignorance could kill us."

"It really could." Soberly she glanced back toward that high-arched gateway. "The first century was difficult. Even after it, Arne the Third was almost overthrown by the Chino wars. Yet a few of the later Regents were able rulers. Our civilization has spread east to the Pacific. A hundred years ago, Arne the Eighth began shipping convicts to North America. A long voyage to a strange land, where trees are said to sing and strange creatures fly. The colony became profitable in spite of the distance and all the hazards, shipping exotic exports, but it's in rebellion now."

"You spoke of war with Africa?"

"War with the black riders and the red jungle where they live." She frowned. "It goes on forever. They're slow, but they never stop pushing out. We've studied them, traded with them, tried to make peace, but nobody understands them. The Regent ought to hope that you have brought some better weapon."

The music was louder, and she moved to the stairs. "Please forget me. I must go."

"We can't forget." Pepe reached to take her hand. "Will we see you again?"

"I hope." She caught his hand for a moment and ran back down the stairs.

"Laura Grail." I heard him murmur her name as she jumped on the cycle and pedaled fast the way she had come. "A remarkable woman, and beautiful as Mona. Her eyes and her hair must come from Mona's genes."

We had both loved Mona, back at the station, though she had

always chosen Casey. She had learned her mother's dances, watched El Chino's holo and had the robots teach her the art of defense, but she remained a free and charming spirit, ready for nearly anything.

"Great luck that Laura came." Pepe watched her vanish through that narrow doorway. "She told us a lot we need to know."

"And left us to wonder about all she had no time to say."

The music boomed suddenly louder. A big man in blue and gleaming gold came strutting out of the open gate behind them, pounding an enormous drum. A flag bearer followed, then a dozen men with instruments blazing music that had a familiar beat.

"'The Stars and Stripes Forever,'" Pepe murmured. "Arne used to play a record of it. But that's a different flag."

When the wind caught the flag, I saw that it was blue, with a white crescent at the center. The band marched straight toward us and stopped 20 yards away. The players separated and spread out to form a single rank.

"What now?" Pepe looked uncertainly at me. "Shouldn't we go down and meet— "

He stopped when they turned away from us to face the gate and struck up another tune. Coming out of the gate was a huge sedan chair, gleaming with polished silver. It had seats for four. Eight men carried it. Black-skinned and bright with sweat, they were harnessed with straps to the poles, four men in front and four in the rear. They stopped at the foot of our stair.

Pepe snatched for the binoculars. The single passenger was Thomas Drake, the little man who had come in the rickshaw to meet us. He shouted a sharp command. The bearers bent to set the chair on the ground. He stepped out, knelt formally before us, rose again to face us.

"Your Worships— " His high voice paused. "Forgive me, I am ignorant of your proper titles."

Pepe stood silent, staring through the glasses.

"No matter," I called. "We are ready."

"Thank you, sire." Drake wiped a shaking hand across his forehead. "If you will descend, Deputy Regent Frye is waiting to receive you."

When Pepe didn't move, I caught his arm to urge him toward the steps and found him stiffly rigid. I heard the sharp catch of his breath. Without a word, he thrust the glasses abruptly at me.

3.

PEPE KEPT THE GLASSES ON THE MEN AT THE CARriage poles. They looked identical. Naked except for blue loincloths, they were black as the man who had pulled the rickshaw. Waiting, they stood rigid, eyes fixed straight ahead, faces expressionless as our robots at the station.

"Look!" He was hoarse and breathless. "Look at their faces." His hand shaking, he gave the glasses to me. "They're Casey!"

I got the faces in focus. Masks rather than anything alive, they were frozen copies of his black Asian features, empty eyes blindly staring.

"The beads!" he whispered, "on their foreheads."

The men were bending in unison to set the chair down. I focused on the black foreheads and the blacker beads centered on them, each small bead with a thin red stain of blood below it. Not mere ornaments, they were hard-shelled bugs, skull-shaped, slick and bright. More alive than the men they clung to, they were watching us with tiny white-rimmed eyes.

The sight recalled a thousand aching recollections of Casey as I grew up with him on the Moon. I remembered how he used to let Arne beat him at chess again and again, just to keep Arne at the game board. I remembered how he used to tease Mona about a little heart-shaped freckle on the side of her nose. I remembered how he used to coax us to read Shakespeare's plays aloud because he loved the language and the drama, always wanting the roles of the villains, Shylock and the Moor and Macbeth, for himself.

Remembering, I felt sick.

"I know those bugs," Pepe was whispering. "from those reports of the survey expedition before we sent the colonists down. When you and Casey and Calvin landed in Africa."

We had all read the transcripts and listened to the audios again and again, till in our minds we *were* the clone selves who had spent their last days here on Earth five hundred years ago. I remembered the rust-red hue of the continent when we saw it from space, remembered the landing in the thorn jungle north of Kilimanjaro, remembered the tangle of saw-edged blades taller than we were.

Calvin DeFort had left the plane to look for whatever built the roads and cities we had seen from space. He never came back. Casey went out to look for him and met the thing that mauled and nearly killed him. A slick black creature the size of a human skull, it had clung with saber-like limbs to the larger alien creature it rode. It sprang free when Casey killed the creature under it, sprang at him, sliced his arms with its talons, chased him back into the jungle, left an infection in his wounds that nearly killed him.

These beads were tiny copies of it.

"You called them vampires!" Pepe whispered again. "Monsters from somewhere off the Earth. Now.... " He gripped my arm hard and stood a long time staring down at the big chair and the eight identical black men standing robot-like at the poles. "Now riding us. Ruling our bodies and sucking our blood." His face had gone hard and cold. A bitter grin twisted it. "I think the colonists have created their own hot little corner of hell."

Drake had come to the foot of the stairs.

"Your Worships?" He seemed impatient and uneasy. "Are you ready?"

Teeth gritted, Pepe led the way down. Drake gave us a sweaty handshake and gestured us into the chair. At a sharp word from Drake, the bearers picked it up and ran with us back through the gate and down a wide avenue.

"Moon Boulevard." Drake gestured. "It runs from the Moon Pad through the government district. The directorates are located along it."

Men in blue-black uniforms guarded street intersections, and brighter-clad people lined the sidewalks. Most fell silent as we came by. Now and then I heard a patter of awed applause, or a child's voice, quickly hushed.

Looking ahead, wondering about the city and the state of the Regency, I saw no flashing signs, no rail tracks, no high towers. Because there was no electricity? Yet the colonists learned to do without. Everything looked well constructed, most of the buildings laid up with some white stone, roofed with red tile, set back from a line of trees at the edge of the empty pavement. The city had an air of solid prosperity.

Pepe was silent beside me, jaws set hard, eyes on the bearers. Shaved heads bent down, black muscles rippling and gleaming with sweat, they ran in step, callused feet slapping the pavement in unison. Slave power, I thought, instead of internal combustion engines.

Pepe leaned forward to talk to Drake, pointing, asking about everything. A few oaks and elms along the street we knew from videos of old Earth, but there were towering toadstools, thick red-brown trunks crowned with masses of leaves that looked like fat, blood-red snakes. They filled the air with a heavy fragrance that had a hint of rotting fruit and set me to sneezing.

"African," Drake said. "Arne the Third send an expedition to collect specimens of the alien biology. He thought the things were ornamental. I despise the bog-rot stink, but they're historical monuments now."

Trying in a nervous way to play the genial host, he said our arrival had been awaited for hopeful generations. The Regent was vastly honored by our visit. His voice turned anxious. Had we brought news of disaster or threat of disaster? Perhaps a second impact?

"No disaster," Pepe assured him. "The computer watches the sky, even while the station sleeps. It has reported no new impactor."

Drake seemed happy to hear that, happy that our arrival had happened in his lifetime. So many generations had died in disappointment. The Regent was eager to know more about our mission. How long could we stay? What were our plans? What did we want to see? What changes had we brought to Earth?

Pepe answered cautiously. We had no plan to change the Regency. All we wanted was information. The station existed simply to replenish the damaged Earth, not to rule it. We had come to survey the

A great blazing fireball was plunging into an ocean, the splash drowning a city, its people in panicked flight from a towering wave.

colony and return to the Moon with our data. Any future action would depend on what we learned.

Drake became the sly inquisitor, turning in his seat to smile and make shrewd queries. Could our telescopes follow events on Earth? Did we know how the alien invaders had reached Africa? Had we been informed of the Scienteer rebellions in North America?

Careful not to betray Laura Grail, Pepe asked for more data about the Scienteers.

Drake's smile faded and his voice grew violent. They were a cult of outlaw heretics, enemies of the Regency. They had been extirpated from Asia, but their treason had lately grown new roots in North America.

"They claim to be Secret Agents of the Moon." He twisted in the seat to peer sharply at us. "Are you aware of any possible contacts?"

"No." Pepe's eyebrows lifted. "Never."

Drake sat back, seeming relieved, and asked for more about the station. If the Moon had no air and little water, if nothing grew there, how had anybody stayed alive there for five hundred years?

"More like five million," Pepe told him. "The robots maintain the computer and rebuild themselves. The station shuts itself down through the rest stage. The computer runs on, but none of us is cloned until it has a new mission for us. The air is vented. Temperatures fall. Nothing oxidizes or decays."

"Remarkable!" Drake shook his head as if he had never heard of robots or computers. "Remarkable!"

He called something to the bearers. They carried us off the street, through a gate guarded by half-a-dozen identical black men who might have been more clones of Casey, uniformed in white and blue and armed with heavy weapons that resembled the muskets we had seen in ancient drawings.

The wide courtyard beyond was filled with heavy chairs like our own, their black bearers standing frozen. Our own carriers ran with us up a long flight of marble steps and set us down between the white columns of a portico at the entrance to a monumental building.

"The Tycho Palace." Drake gestured. "Once the Regent's residence. Now Deputy Regent Frye's."

Frye came smiling down a strip of red carpet to greet us. A fleshy man with a gleaming silver band around a head of yellow curls, he wore a shapeless silver garment that resembled the togas in drawings of ancient Rome. It looked stiff and heavy, as if actual metal wire were woven into the fabric.

"Agent Navarro! Agent Yare!" He caught our hands as we climbed out of the chair. "Regent Arne regrets that he is not able to be here himself. On his behalf, we welcome you to Earth. He asked me to put every resource of the Regency at your disposal for the duration of your visit."

His hand felt limp and lifeless. He drew it quickly back, his shrewd eyes narrowed to scan us. Pepe asked him to give our thanks and greetings to the Regent, and we followed him into a long hall that hummed with many voices.

"Agency people." Drake nodded toward the crowd. "Officials. Citizens of Kashmir. All eager to meet you before we go in to dinner."

Perhaps they were. The clamor of voices paused while a man with a foghorn voice announced our names. People stared toward us for a moment, but most turned back to their groups. The voices rose again. Any eagerness to receive us was well contained.

We stood there at the entrance, getting our bearings. The room was huge, the voices ringing back from lofty walls and a vaulted ceiling. My eye was caught by huge murals whose artist had tried to imagine the impact and its aftermath. On one wall, a great blazing fireball was plunging into an ocean, the splash drowning a city, its people in panic flight from a towering wave already curling high over them. Opposite was a cratered lunar landscape, an immense crystal dome for the station, a giant stalking from it to a red-painted spacecraft. Wearing a toga like Drake's, the giant had no helmet or space gear. An enormous portrait of Arne stared down from the end of the room, a cold smile on his heavy-jawed, square-chinned face.

"He ought to be here," Pepe murmured at my ear. "Our own Arne on the Moon. He'd be proud to meet his heirs." He shook his head and squinted at me. "I'm afraid, though, the Regent would see him as a problem."

Leading us into the hall, Frye nodded at a group of white-gowned men around a young woman in bright green.

"Someone you must meet." He raised an imperative hand. Laura Grail left her companions and came smiling to join us.

"A watchgirl," he said. "She will want your story."

Blue eyes wide, she waited innocently for him to introduce us.

"Our distinguished guests," he told her. "Inspectors from the Moon. Agent Pepe Navarro." Pepe bowed over her offered hand. "Agent Duncan Yare. They may have questions you can answer."

"We have questions of our own."

Pepe nodded at a young woman standing near us with a tray of glasses. Naked to the waist and blonde as Mona, she had the vacant face of a sleeping child. Her eyes were wide, unfocused, blankly staring. A small stain of blood was drying around a bright black skull-shaped bead in a spot of drying blood on her forehead.

"Sire?" Still staring blankly, she spoke in a child's high voice. "A cocktail?"

Frye took two drinks off the tray and offered them to us. Grimly, Pepe shook his head. I tasted the cocktail. It was something sharp as vinegar, raw with alcohol. I set it back.

"That button?" His voice suddenly harsh and violent, Pepe pointed to the skull-shaped bead. "What is it?"

"A rider," Frye said. "Something new to you?"

Pepe nodded, bleakly silent.

"There's the expert." He beckoned to a man half across the room. "Grendel Venn, the Agent for Energy."

Venn waddled to meet us, breathing. As soft and fleshy as Frye, he gave us a genial grin and offered a fat white hand.

"Our guests are inquiring about rider energy," Frye told him.

"I have inquiries of my own." Venn's pale eyes narrowed to scan our faces. "I suppose you have electricity on your flyer? Perhaps atomic energy? The ancient texts are full of technologies we must have lost. If they ever did exist."

"Electricity does," Pepe said. "Tycho Station runs on nuclear power. But I want to know about those bugs."

"The riders?" He paused to study us again. "Call them compensations for whatever we may have lost. If you have something better, I hope you can share with us."

Pepe looked back at the woman with the tray of drinks. Still near us, she stood rigid as the wax figures I had seen in old holos. Venn reached for a drink to offer him. He gestured as if to knock it away. His face white with emotion, it took him another moment to control his anger, but at last he spoke reasonably.

"We do have records of basic science. We could share them, but your people would need to develop the skills to use them, to build a new industrial infrastructure." He pointed a quivering finger at the skull-shaped bead. "That's what I asked about."

"A high technology of our own." Venn smiled with satisfaction. "You may not know our history. Our first century was a time of troubles. We had problems and found solutions. With the old technologies lost, we built windmills. We developed water power. Most useful of all, we learned to use the riders."

Pepe's fists had clenched. "Those black bugs?"

"A *surprise* to you?" Venn backed away and raised his hand defensively. "If I must explain, the seed are bartered from Africa. They are grown and trained on our own rider farms and planted in sterile labs by skilled surgeons. They are an essential economic resource. More precious than rubies, as the saying goes."

"Planted?" Pepe rasped. "Where?"

"Where you see them." Venn gestured at the girl. "In the brains of convicts and clones."

"You breed clones for slaves?"

"Why not?" Venn's voice sharpened impatiently. "We have no other use for them."

Pepe nodded to the girl. "Is she a clone?"

Venn swung to bark at the girl, "What was your crime?"

"Shoplifting, sire." Her high child's voice held no feeling. "I took fruit from a market because my mother was hungry."

"You see?" He turned back to Pepe. "The riders are instruments of social order. They remove convicted criminals from society without the cost of prisons or guards. The surgeons assure us that they feel no pain. Their labor serves the nation. Does that answer your question?"

"It does," Pepe muttered. "It certainly does."

Venn stalked away and Laura stepped closer.

"Please!" She breathed the word sharply. "Don't speak of slavery. The Scienteers have always fought to get rid of the riders. That is their greatest treason. Suspected sympathy could earn you a rider of your own."

4.

"NICE TO MEET YOU BOTH." LAURA GRAIL RAISED her voice and smiled for those around us. "Welcome to the Regency. When you have time, I want to get the whole Tycho Station story for our readers."

"One more question," Pepe murmured. "How can we find Mona?"

She shook her head and slipped away. He stood looking after her till Frye caught his arm.

"Your Mercies, please." Frye nodded at the crowd, scores of people talking and sipping their drinks, ignoring us after those curious glances when we were introduced. "Our guests are dignitaries invited to meet you."

"Happy about it?" Pepe grinned. "They're keeping their distance."

"Hesitant, perhaps." Frye frowned in apology. "Please understand that your sudden arrival has taken us by surprise. Created something of a crisis, in fact. Nobody is certain what to expect from you."

"We are grateful for the welcome," Pepe assured him. "We plan no trouble for anybody."

He gave us a narrow look and escorted us around the hall. I listened and made mental notes for our reports. Pepe spoke for us, wary with what he said.

The Agent of Trade was a short fat man named Galt Wickman, who wore a bright gold headband and a golden fringe on his toga. Frye told us he owned the rail system. He shook our hands and beckoned the girl with cocktails. Moving as stiffly as a robot, she thrust her tray toward us and stood rigid, the black bug on her forehead watching us with tiny bright eyes till we refused the drinks and the Agent waved her away. He stood inspecting us in a silence that had grown awkward before Frye broke it.

"Our guests are curious about our sources of power. They were asking if we understand electricity."

"Our engineers are researching it." His mouth pursed thoughtfully. "I've seen them creating bolts of lightning, but nothing useful. we've done better with steam. Our first experimental steam engines were installed over two centuries ago to replace water power in seasons of drought. Steamship followed the coasts and eventually finally reached the Americas. Our rail system has spread south to the Indian Ocean and east to the Pacific."

"Human power?" Pepe nodded after the girl with the drinks. "These bugs you call riders? I understand that they come from Africa?"

"The seed does."

"So you grow the bugs?"

"I don't." Wickman flushed and looked uncomfortable. "If you want to inquire into rider culture, talk to Sheba Kingdom."

"There she is." Frye nodded at a woman across the hall. "I'll introduce you. Her family controls the Africa Company. If you care about history, there's a historic drama."

Sheba Kingdom glanced at us and turned back to the group around her while Frye expanded on his drama.

"Her great-great grandfather was an early explorer, back before the age of steam. A typhoon wrecked his sailing vessel on the east coast of Africa. He got ashore alive and escaped 20 years later, paddling across the Red Sea in a crude little skin-covered canoe.

"He had been captured by the alien rulers of the continent. Creatures he called the black masters. One of them had ridden him, its fangs driven into his skull and controlling his brain. He got free when it died. He had learned their language. He went back in one of the first ocean-going steamers and bombarded their coastal cities with his cannon till they agreed to trade with him. That began the Africa Company. It has been profitable. Sheba Kingdom is said to be the richest woman in the world."

She left her admirers and strode toward us. A commanding presence, she was tall and muscular, her long dark hair bound in gold. A heavy rope of black pearls hung below her ample breasts. Gold paint shone on her lips and around her eyes. She stood silent, regarding us with cold curiosity, while Frye explained that we were the new Agents from the Moon.

"Have you dictates from the Moon?" Her voice was hoarse and almost masculine. "Orders you expect us to obey?"

"None," Pepe told her. "We came only to look and report what we find."

"They were inquiring about rider cultivation," Frye added. "Perhaps you can explain it?"

"Why?" She fixed him with her gold-rimmed eyes. "Why are you concerned?"

"We see them everywhere." Pepe nodded at the girl with the drinks. "Our computer will want information about them."

She frowned impatiently, moved as if to leave us, swung abruptly back.

"You can tell your computer that the rider seed we import from Africa are eggs of the black masters. We hatch them in baths of human blood, sterilize them to prevent unwanted reproduction, select and drill them for designated services. If that's any business of your clever computer on the Moon."

She tossed her massive shoulders and stalked away.

Frye spread his hands and took us on to meet Deputy Houston Blackthorn, the Agent for defense. A towering, black-bearded man in a dark-blue uniform, he wore a long sword in a jeweled sheath and gleaming medals on a wide, red ribbon across his barrel chest. Crushing our hands in a powerful fist, he told us to inform our computer that the Regency was well prepared to defend itself from any hostile power. I wondered if he saw the Moon as a hostile power, but decided not to inquire.

Frye asked him about the war.

"Which war?" His bronze grin was gone. "We've run the nomads back into their desert and fed a thousand Indonesian pirates to the fish. We're holding like a stone wall on the African front. As for North America—" His lips set hard. "It's half the world away. Ships take forever. Those frammed Scienteers have sprung up like African poisonwarts. They have a new leader now—"

He scowled though his beard.

"—a woman who claims to be an actual Agent of the Moon. Sent to warn the world of another impact due. So their poison rhetoric goes. Her spacecraft crashed on the glaciers up at the head of the

valley, if anybody believes. She should have been seized and bugged for such a tale, but Scienteers agents got her to America. She's sowing her treason there."

Mona. Pepe looked hard at me, his lips moving to shape the silent words. *She is Mona.*

"A problem for us." Blackthorn shook his head. "Too many colonists believed her crazy story. Rebellion spread. Our forces always outnumbered them a hundred to one, but driven clones don't fight like those madmen. We had losses, but now we have them on the run."

A GONG BOOMED. FRYE ESCORTED US INTO ANOTHER VAST ROOM. A long table ran down the center, a wide fan above it swinging lazily back and forth, driven by two of Casey's black clones hauling on a rope, one at each end of the room. Porcelain, silver, and glassware shone on a sea of white cloth. A white-clad waiter stood at attention behind each chair, a bright black bug gleaming on his vacant face.

I was seated between a sallow-faced bureaucrat from the Justice Agency and an attractive young woman with a crimson hairband and a crimson fringe on her gown. Her name was Ellen Teller; she said she was a broker. Pepe sat just beyond her, Frye at the head of the table.

The gong sounded again. The guests rose, lifted glasses of a sour black wine, and drank to the greater glory of Regent Arne XIX, Agent of Earth. I was half expecting a toast to the guests from the Moon, but Frye did not propose it.

The waiters began serving us from wheeled tables. Although most life in Asia had sprung from our own seedings, the dishes were often strange to us. Ellen Teller explained them brightly when Pepe asked. Baffled by the silverware, I was watching for clues from the people across the table till she laughed at me.

"Don't fret about your table manners, Agent Yare," she told me. "If you're awkward with your forks, it's the best evidence that you're really from the Moon."

When Pepe asked, she explained the murals. They were historic: gigantic figures of Arne the First climbing a Himalayan peak, Arne the Tenth carrying a flag ashore to conquer North America, Arne the Twelfth carving a path through a jungle of crimson blades to battle a double-headed monster.

"You're a broker?" Pepe inquired. "Can we talk about your business?"

"Certainly," she told him. "I deal in riddens."

"You do?" Silent for a moment, he turned to look at her. His voice grew sharper. "You mean clones? Ridden by those bugs?"

"Oh no!" She laughed. "Most black clones are grown on low-profit contracts for wholesale. We deal in fresh convicts from the Justice Agency. A speculative market, but far more profitable. The fresh convicts require individual attention, but many retain useful skills and abilities, well worth the care." Silent for a moment, she added brightly, "If you need any special services, I can probably supply them."

"I see," Pepe said, and sat staring moodily at the bugs on the foreheads of the waiters across the table until she began asking what Agent Frye was planning for us. He muttered that he had no idea.

"The Regent will want to receive you," she told him, "as soon as he's certain you are really from the Moon."

"How could he doubt?"

"The Scienteers are always attempting to deceive us with claims of new messages and messengers from the Moon. Most recently in America."

Pepe sank into gloomy silence, and she chattered at me. "You should visit America if your stay on Earth allows—a long voyage, but there's a good stop at Cape Town. That's our African treaty port, where we trade for the rider seed. There are fascinating side trips you ought to take, to see the red thorn bush and the plantations where the masters work their own creatures. Even a zoo of exotics."

Pepe aroused himself to ask, "What do you trade for the seed?"

"Minerals," she said. "The masters, you see, are believed to have evolved somewhere off the Earth. Their biology is certainly different. And their culture, which depends on biology instead of machines. They don't do much mining or chemistry. We supply them with fluorides, iodine, bromine. Elements their odd metabolism seems to require."

Pepe muttered something under his breath and subsided again.

"I have been to America on a business trip, hoping to set up a branch office." She turned back to me with a face of distaste. "Horrid hotels, and the project came to nothing. Hostility to rider labor, and now this female rebel who claims to be an actual Agent of the Moon."

Pepe dropped a spoon. Instantly his waiter picked it up and placed another by his plate.

"If you don't have time for the voyage," Ellen Teller went on, "you must see the museums here in town. Splendid dioramas of African and American exotica, and fascinating relics of our own dark age and the early wars with the black masters."

"You fight them?" I asked. "And you trade with them? If you don't mind the question— ?"

She laughed.

"We have to fight, because their jungle keeps on spreading. A wall of tall red blades with poison thorns that rip a man to ribbons and infect him with a virus that kills. The masters and their monsters breaking out to raid human settlers. You have to hate them." Philosophically, she shrugged. "Yet rider seed are my business. It has been very good to me."

We had slept four centuries since our escape from those vampirish black parasites in the red thorn jungle in Africa, yet the flight seemed as real as yesterday.

The gong rang. The hall went silent. The guests rose, hands on their hearts. Frye led a pledge of devotion to Regent Arne. We stood in a reverential hush till the gong sounded again. Voices rose again and Frye came back to us.

"Great news for Your Mercies," he said. "The Regent will receive you tomorrow at noon. In the meantime, I have reserved the government guest house for you."

I looked at Pepe. He shook his head.

"We are grateful to the Regent and to you," I said. "But we prefer to live on our ship till we get accustomed to the gravity and atmosphere of Earth."

"The Regent will be informed, and you may return to your craft."

Drake met us at the door with the eight-man chair and took us back through the unearthly trees and evil reeks of Moon Boulevard. A squad of black clones at the arena gate saluted and let us pass. He left us, with a promise to pick us up at noon next day for the reception.

At the foot of the stairs, Pepe glanced across the arena and frowned at the narrow doorway where Laura Grail had entered. Beside it, I saw a rickshaw, overturned and abandoned. With a puzzled shrug, he turned to climb the stairs and stopped abruptly, looking down at the steps. They were spattered with blood.

Inside the lock, we heard hoarse breathing and found a naked black man lying on the deck. When he heard us, he gasped again and turned his head. I saw Casey's familiar Chinese face, now with a wide red smear across the forehead.

"Casey?" Pepe whispered. "Casey?"

5.

HE MOANED AND SANK BACK ON THE FLOOR, EYES closed, a thin stream of blood still oozing from the narrow black pit on his forehead.

"Casey!" Pepe knelt to call his name. "Can you speak to me?"

Lying on his back, the sounds of his breath faint and slow, he made no response.

"It is Casey," Pepe whispered.

"Are you sure?"

"I saw it in his eyes. He knew me."

He lay still while we washed off the drying blood and sprayed healant on the wound. Pepe opened the aid kit, stuck the sensors to the vital points, made a face at the red-lettered readout.

"It knows no more than we do."

Rolling the body over, we found hard calluses on his hands and feet, but no other injuries. We folded the co-pilot's seat back to make a bed and lifted him into it. He lay there lifeless except for the faint, slow wheeze of his breath. We took turns sitting with him and saw no change. I was at work on a report for the station when Pepe saw the gate opening.

A squad of uniformed men marched in and scattered to search the field. They found the overturned rickshaw and trundled it away. They climbed into the red-painted plane that stood on the other pad, came out again, and finally gathered around our craft. Their leader hailed us.

"Your Mercy, please forgive us. We are searching for an escaped slave. A black clone, desperate and dangerous. We have traced him here. Have you seen him?"

Pepe glanced at the blood on the stairs and turned to me. I took a moment to think. Caught with Casey aboard, we could be branded as Scienteer agents and enemies of the Regent. Yet I shook my head.

"You're hunting a runaway slave?" Pepe mimicked astonishment. "You won't find him here."

"Watch for him, Your Mercy. He is a danger to you and your machine. Any evidence must be reported at once."

He formed his men into a column and marched them away. Pepe shrugged uneasily and we went back inside to take Casey's pulse and try the aid kit again. With no medical skills, no equipment except the kit and the healant, we knew nothing else to do.

The healant had stopped the oozing blood. All afternoon he lay flat, breathing heavily, with no response when we called his name or offered water. Sometime after sunset, he sat up and looked around the cabin. I saw fleeting recognition, and then stark anxiety.

"Mona? Where's Mona?"

"I don't know," Pepe began, "but we've heard— "

With something like a sob, he sank back and lay still again. All that night, we took turns napping and sitting beside him. Sometimes he rubbed at the sealant on his wound. Sometimes he shouted words I didn't understand and thrashed out at some invisible foe. When I caught his hand, he clung to mine as if he needed human contact and his rapid breathing slowed. He relaxed and finally seemed to sleep.

Early next morning I woke from a doze and found him standing by the bed. Swaying unsteadily till he got his balance, he padded to the bathroom. I heard the shower. He came back naked, his body drawn lean but good muscles rippling under his skin.

"Mona." He stood gazing at me, his features twisted with pain. "Have you found her?"

Pepe shook his head and asked about her.

"I don't know anything." His voice was a rusty rasp. "We left the plane on the ice when they fired at us and tried to hide when they hunted us. They caught me. I don't know what happened to her."

"I think—I hope she got away," I told him. "We've heard of a woman fighting with the rebels in America. A woman who claims she came from the Moon."

"If it's Mona." He fell silent, scowling grimly at ice-white peaks far beyond the window. "If we could reach her."

"If we could." I had to shake my head. "She's half way around the world. If she's really Mona."

"But now, Casey— " Pepe hesitated. "Could you tell us what it was like? With the bug on your head?"

"Hell!" He shivered and tried to grin. "Later, maybe. If I can. Not just yet."

"Don't fret about it." Pepe shrugged. "You've lost blood. How do you feel?"

"Huh?" Fingering the sealant on his forehead, he stared for a moment as if we had been unwelcome strangers. "Sorry, Pep." He grimaced and shook his head. "It was a nightmare. I'd like to forget—" He drew a long, unsteady breath. "I'll be OK, I think. My head—" He frowned and touched the sealant as if it puzzled him. "What I need is sleep."

"No breakfast? Can you eat?"

"Breakfast?" He frowned again. "I can try."

Pepe made a pot of the bitter brew the robots called tea and heated three of the breakfast packs they had made for us. Casey tasted uncertainly, ate with a growing appetite, wanted another mug of tea.

"If you can talk," Pepe asked again, "can you tell us how it was?"

"If you want to know." He huddled in silence for a moment, pulled himself grimly straighter. "It was *hell*!" his voice exploded, but then he went on more evenly. "If you believe in hell. My head bursting with an ache that never stopped. Worse, the utter helplessness. I could feel everything, hear everything, see everything that came in front of my eyes, but I couldn't move a muscle. Even an itch on my nose was torment. I couldn't scratch it.

"Or even think, except in moments when the bug wasn't using me. I fought for freedom when I could. Fought to wink an eye, move a finger. Waited for a chance. Last night they had us sweeping streets. I was coming out of an alley with my broom when the bug stopped me to let a freight wagon pass. In that free second, I saw a stormdrain at my feet, dropped the broom, and managed to trip. Twisted my head as I fell. It fought—fought— "

His voice gone, he peered at us as if we were sudden enemies. Fists clenched, he blinked around the cabin as if he had forgotten where he was.

"Sorry." He grimaced and caught a ragged breath. "It tried to kill me. Hit me with its own pain when it struck the pavement. Knocked me cold. I lay there, I don't know how long I lay there, before I got back to myself enough to jerk the dead bug out of my head. And then— "

In a dazed way, he stopped to brush at the sealant.

"The next I remember is the stink of those queer trees. The freight wagon was gone. The street looked empty. I had to lean on a wall till my head cleared. Ran up the alley when I could. Found the rickshaw outside a repair shop and used it for cover to get me here. Now— "

He stopped to scan us with anxious, blood-shot eyes.

"Can you hide me? Let me—let me sleep?"

His voice trailed off. He sank back on the bed, gently snoring.

"We've got to hide him," Pepe said. "If we can."

He found a spade and climbed down the stairs to toss sand over the spatters of blood. I updated my report for the computers and found a pale Moon climbing behind the Sun. It gave me a dream-like image of the station, Earth blazing out of the black north sky across the crater to light the dome. I sat filled with a wistful longing for it, while Pepe sent the report and we waited for an answer.

I had grown up half in love with Tanya, half with Mona, always sadly aware that they both loved Casey more. And never fond of Arne. Not yet any proud prince of Earth, but always an arrogant snot nobody loved, though Dian had let him claim her.

I remembered how they all came to say farewell when we took off.

Arne shook our hands and said we'd be sorry. Dian wished us luck. Tanya had kissed us and cried. I wondered how much they would care about us now. Enough to mount a rescue expedition if we had to beg for it? I thought not.

When our message got no answer, we were not surprised.

CASEY SLEPT, SEEMING AT LAST TO BE AT REST, WHILE WE KEPT AN anxious lookout from the windows. A few people came and went to stare at us from the roofs beyond the wall, but we saw nobody in the arena. When time for the reception drew near, I shook Casey's arm.

Still heavy with sleep, he stood up unsteadily, stumbled to the bathroom, and gulped another mug of tea. He seemed bewildered and alarmed that we had to leave him, but he let Pepe persuade him to climb down into the coffin-like cargo locker between the fuel tanks. We shut the door in the floor and spread a scrap of carpet over it.

Noon came. The gate opened. A silver-trimmed, eight-man chair came out, Drake and Frye in the front seat. They stopped the carriers at a little distance and stepped out of the chair. We climbed down the steps to meet them.

"Take your time," Pepe murmured. "Don't forget who we are. Actual Agents of the Moon."

"Your Mercies!" Frye shook our hands rather too heartily, while Drake hung diffidently back. "The Regent is ready to receive you."

Yet he beckoned us farther away from the chair, glancing back as if he thought the bearers or their bugs might be eavesdropping. His voice fell confidentially.

"Your Mercies, I trust you." He glanced at me so narrowly that I thought he didn't. "You have been asking for information about Regency affairs. May I presume to add a word of my own?"

"Please," Pepe told him. "Really, we need to know everything."

"There's a crisis in the making." He caught our arms to pull us closer, his voice almost a whisper. "You should know that Regent Arne is no longer what he was. You will meet his second wife, Fiona Faye. A bitch!" Dislike twisted his face. "Forget the word, but that's what she is. She flaunts her position and dishonors him. She is said to sleep with her clones. Perhaps also with her current favorite, Labor Agent Ash. She's plotting to make him the next Regent.

"The rightful heir should be the Regent's son, Harold. He is now in America, commanding our forces there and too far away to protect himself. As for Ash— " Frye's lip curled in contempt. "He deals in controlled convicts. Buys them through Teller. Keeps the best women for himself. Sells the rest or works them to death on his own plantations."

He stopped to study our faces.

"A precarious situation, made more urgent by your arrival. If you get in anybody's way, the outcome could be ugly. Ugly for you and all of us, if you get me."

Pepe nodded soberly to say we did.

He beckoned us into the chair and the bearers ran with us out of the arena and back through the wagons and chairs and rickshaws and the evil reeks of the red-crowned fungoids on Moon Boulevard, which ended at a fountain playing around the feet of a towering figure of Arne the First. A wide flight of white marble steps rose to the Regent's palace: a monumental pile of black granite beyond a white marble colonnade.

A squad of Casey clones halted us and searched us before they escorted us down a long hall to an empty antechamber, a huge room with bare wooden benches along the side. We waited uneasily there till at last a gold-clad guard beckoned Pepe and me into the Regent's sanctum. Drake and Frye rose to go with us, but he gestured in hard-faced silence to leave them standing, trying to hide their discomposure.

Regent Arne sat waiting with his wife at the center of a long table on a raised dais. A huddle of failing flesh in a gold-fringed toga of woven silver, he blinked at us dimly. I saw no likeness to the Arne we had known on the Moon.

Fiona Faye was a thin little woman in a purple robe. She may have been a beauty once, in spite of a hawkbeak nose, though the golden mask painted around her eyes and the enameled coils of her black hair made that impossible to guess.

The table was bare except for a small glass of some dark liquid, set in front of the Regent. He reached for it with a shaking hand, but pushed it clumsily away when she frowned. Alone with them in the silent chamber, we stood there a long time, waiting under his empty gaze and her predatory stare.

"You!" Moving suddenly, she stabbed a silver-nailed finger at Pepe and then at me. Sharp as a thrown knife, her voice clattered against the high bare walls. "Who are you?"

We gave our names.

"Where were you born?"

"At Tycho Station," Pepe said. "On the Moon."

"Can you prove it?"

"You can see our spaceplane on the field. Your people saw us land."

"If you did— " She let us wait half a minute, her gold-rimmed eyes squinted at us coldly. "Do you bring a message?"

Pepe glanced uneasily at me and took his own time to answer.

"Only that Tycho Station is still there, its mission still to keep humankind alive on Earth."

Her probing stare swung to me and back to Pepe.

"You bring no warning of some danger in the sky? Nothing of this demon stone the Scienteers rant about, falling out of the sky to kill us all."

"No stone I've heard about." Pepe shook his head. "Our computer watches the sky. It follows many objects. It has reported nothing on a collision orbit."

She shrugged, with no sign of surprise or relief. "So why are you here?"

"We came to survey the progress of the colony since it was planted. And to offer help toward further progress if help is wanted."

"Help with what?"

"Information, if you want it." Pepe paused expectantly. I saw no change in her wolfish intentness or the Regent's dull indifference. He tried again. "We should be able to bring you arts and skills that seem to have been lost. Technologies I think you could use. Electricity, perhaps."

"Electricity?" The Regent blinked vacantly. "What's electricity?"

"A useful force. It creates light. It can give you power."

The Regent's head was drooping. She jogged him with her elbow. He farted loudly and glared at me.

"You get heavy rains in the monsoon seasons." Pepe swung back to her. "Snow on the mountains. From space we saw great rivers and magnificent waterfalls. We can bring you technology for hydroelectric— "

"Hydrowhat?"

"Energy," Pepe said. "Power to build a greater civilization." He raised his voice to penetrate the golden mask. "Your technology has stalled. You would have to train engineers and build an infrastructure, but we can bring the science you seem to lack— "

"Liars!" The regent pointed a trembling finger at us. "Scheming Scienteers!"

I remembered the singing trees that must have co balloons they had grown to carry their seed, re

"Not so, sir." Pepe grinned in desperation. "Give us a chance. We can prove who we are and help you change your world. Electric power could do a thousand times more than your driven slaves. You can get rid of those hideous bugs—"

"Treason!" She shrieked at the regent, her golden face a mask of hate. "They are Scienteers!"

With a dim smirk at her, the Regent picked up the glass and tossed the black liquid down his throat. Alarm gongs crashed. A heavy wooden wall crashed down in our faces. We were suddenly surrounded with black clones swinging clubs and machetes.

6.

OUR GUARD SQUAD WAS HALF-A-DOZEN BLACK clones under a blind white leader. One of his eyes was a shriveled pit. A dark patch hid the other. The tiny black eyes of the bug on his forehead watched every move we made. He, or perhaps the bug, drove us with harsh staccato commands: *Walk! . . . Quick! . . . Right! . . . Left! . . . Halt!*

He marched us back up Moon Boulevard to the Agency of Justice, a modest red-brick building two blocks down a side street. Inside the building he left us locked in a long bare cell with a stone bench along one wall and a narrow ditch of reeking sewage across the end.

A thin blade of sunlight from a high window slashed through the shadows to pick out a little man in a dingy gray cloak slumped into a sobbing huddle on the end of the bench. The iron door clanged behind us. Feeling trapped and bewildered, stunned by disaster, I could only stare at Pepe.

"I wish we'd never landed." He dropped his voice, though the weeping man had paid us no attention. "Or never left Casey alone on the plane. God knows what will happen to him now."

Or to us, I thought.

Searching gamely for any way out, he sat down beside our unhappy companion and coaxed him for his story. Between the sobs, he whimpered that he had discovered his best friend in bed with his wife. Out of his head with grief and fury, he picked up a lamp and struck his friend. His wife screamed and grappled him. He struck again. His friend fell and died. His wife's arm was broken, but she ran out naked and called the law.

"What will happen to you now?"

"I don't care." He rubbed his red eyes. "They can bug me if they want. I should have died with Carlo."

With no cheer from him, Pepe probed for any hint of hope from other prisoners that came in through the rest of the day. One was a jittery little man in a dirty white toga, eager to tell his tale. He had been an honest businessman, selling tropic fruit from a stand on Regent Street. Arrested for robbing a silversmith, he was the innocent scapegoat of the actual thief.

"Early this morning I was walking as always to my little stand on the street. The thief dashed past me, a fat cop whistling behind him. He snatched my hat and tossed a handful of stolen silver at my feet. I followed him to recover my hat. He stopped, pointed back at the scattered silver, and swore that he had seen me tossing a brick through the shop window. The cop laughed at the truth and let him walk away with most of the loot still in his pockets."

The weeping man sat up to give Pepe a sardonic shrug.

"Believe him if want. I'd say his bug is talking. It makes a man a fool, even before it grows into his brain, but his lies will never save him. The judge won't listen and his bug won't care."

He wiped at his swollen eyes with the back of his hand and sank back into dismal silence.

"How many get bugs?" Pepe turned back to the man in the dirty toga. "Don't some go to prison instead?"

"Prison? What is prison?"

"You're the Moon men?" He stared as if we had been strange animals while Pepe tried to explain what a prison was. "If such places ever existed, they are not needed now. The bugs are enough."

When the door clanged again, our next guest was a drunk in a blood-spattered toga and a rag around his head. He staggered to the end of the cell, vomited noisily into the ditch, fell back on the bench, and lay there in a reek of raw alcohol, snoring hoarsely.

The last to come in was better dressed, with a gold hairband and a gold-fringed garment that looked like silk. A swarthy fellow with a thick black moustache, he seated himself with an air of offended arrogance and ignored Pepe's first efforts at talk. When Pepe persisted, he exploded into a sudden diatribe.

"They call this the temple of justice, but I've been frammed!" The word was new. "Frammed by my partner. We were in construction. Royce & Ryan, a fine old company, loyal to the Regent, our buildings standing all over the city. We were bidding on contracts for the Asian Tower when my first partner died and his son replaced him.

"Mike Ryan, a cocky kid just out of college and full of tarky about civil rights. We'd always used contract labor. Black clones for heavy work, ridden convicts for skills with steel and fine masonry. Of course the freeman unions always fought us when we went to the brokers for their skilled ex-members who had been bugged for strikes and riots. Mike wanted us to hire freemen at twice the price. I told him that would ruin us, but the framhead wouldn't listen.

"Instead he schemed to fram me. Accused me of his own crimes. Forged evidence that I was in a big conspiracy to liberate convicts. Killing their riders with the juice of some poison weed smuggled out of Africa and running an underground railway to get them to freedom in America.

"A monstrous plot to get me out of his way and take the company over." He sighed forlornly. "The stupid Justice Agents raided our office, seized our records, arrested me. Look at me now! A convict myself, sentenced to sweat out the rest of my life with a bug in my head."

The tearful man roused himself again.

"Could be the other way round." He grinned maliciously at Royce. "Could be you were the thief. Could be your victim turned the tables on you. Could be you framed yourself."

THEY SAT GLARING AT EACH OTHER WITH NO MORE TO SAY. THAT THIN blade of sunlight shifted and reddened and dimmed. The guards brought a jar of water for us to pass around, but no food. The stinking ditch was a latrine when we had to use it. The drunk slid off the bench and lay snoring on the floor.

Pepe paced the narrow floor and came back to whisper at me.

"Think, Dunk! Think! We're dead if we don't."

I tried and thought of nothing.

The light faded. Pepe paced as long as he could see. Stiff from sitting, I felt stiff and cold and hopeless. The dark cell grew silent, except for coughs and snores and the sad man moaning that he loved his wife and never meant to kill Carlo. I slept at last, dreaming that we were back in the plane, on our way to the Moon. The screech of the iron hinges woke me.

The others had been given numbers, by some system I never understood. Guards reading numbers off a slate came to call them out, one by one. The drunk lay snoring till the red-eyed man shook him awake, tried to vomit again, and staggered out after the guard. Pepe and I

me from somewhere off the Earth, remembered the membered the gold-winged seed called Mona.

waited uneasily until at last we were taken down a gloomy corridor and into a room where sunlight dazzled me.

The wide window framed a walled garden of luxuriant plants with thick purple cactus-like leaves and huge, trumpet-shaped scarlet blooms. The Sun shone across a wide desk of some jet-black hardwood, polished till it mirrored the glare. The air was sharp with the odd scent of tiny golden flowers on a moss-like plant that filled a crystal bowl.

"Gentlemen!"

The rider broker, June Shawn, greeted us genially, smiling across the desk. Dressed in something brighter and more revealing than her toga at the dinner, she looked bright and young and clean, almost as attractive as I remembered Mona and Tanya. She rose. I thought for an instant that she was coming around the desk to shake our hands, but she beckoned briskly at the chairs in front of the desk. "Please sit down."

We sat and waited.

Seated again, she eyed us thoughtfully. I felt cold and tired and grimy, stiff from trying to sleep on cold hard stone, hunger aching in my belly. She shook her head at me as if in sympathy for my discomfort and turned to Pepe.

"So you say you're Agents of the Moon?"

"We are from Tycho Station," he told her, "but here only to look and report what we find. We claim no authority to meddle with anybody." He bent toward her desperately. "All we want is to get back on our plane and back to the Moon."

-"Sorry." I thought I had seen a momentary flash of pity, but her smile was gone. "The Regent permits no appeals. Our problem now is your future here. Your cellmates were easy enough to place, but you— " She paused to frown searchingly. "Do you have manual skills that might be useful here?"

In a moment of hope, I nodded at Pepe. "He's a space pilot."

She looked at him.

"A skill you may not need." He shrugged and added quickly. "Better than that, we can bring you knowledge. At the station, we have a library and museum filled with the art and history and science of the old Earth. Treasures of the old world that could transform yours."

She was shaking her head.

"We've seen the Regent," he hastened desperately on. "Perhaps he doesn't want any major transformation, but we aren't here to threaten anybody. There must be bits of technological know-how that you could use."

"Perhaps somebody can use them." She glanced through the open door and nodded thoughtfully. "I'll inquire." She studied us again and asked abruptly, "Have you eaten?"

"Not lately," Pepe said.

She clapped her hands. A black Casey clone came in with a huge silver tray stacked with glasses, a pitcher, a bowl of ice, and a dish of little cakes that filled the air with a fragrance that wet my mouth. We watched avidly while the silent clone scooped ice into the glasses and filled them with a pale pink liquid.

"Glacier ice." Beaming expansively, she let the clone hand her the first glass. "A new luxury. The Agent of Trade has just opened a new road through the mountains all the way up to the glaciers. Clone runners are now able to get the ice to us before it melts."

The drink was the juice of an American fruit, she said. She had brought seedings back from her visit there, and established them on her own plantation. Famished as I felt, its tangy sweetness was a delight. We drained the glasses and the clone offered the cakes. She watched with an evident amusement at our appetites till he was gone with the tray.

Ignoring Pepe's thanks, she picked up a slate, frowned at it, and shook her head.

"The Regent sees no good in this electricity, whatever it is, or any of your magic off the Moon." Erasing something on the slate, she peered at Pepe. "Can't you do some useful work that might interest a buyer?"

"Don't you believe us?" he begged her desperately. "Don't you believe we're really from the Moon?"

"Who knows?" She shrugged. "I've seen your flying machine. We might do better if I knew more about you. Tell me about this city on the Moon. How does anybody live there, with no air to breathe?"

She listened with apparent interest while he tried to describe the station.

"Get us back to our machine," he told her, "and we can fly you there." A flash of interest lit her face, and he hurried on. "We could freeze a tissue sample, if you like. You could be cloned to live again on future worlds. A kind of immortality— "

"Clone me?" She was offended. "I've seen clones enough. My problem is a place for you."

"A bug, you mean?" Pepe bent toward her, hoarse with dread. "You want to drill holes in our skulls? Plant those hideous little monsters in our heads, to ride us and torture us the rest of our lives?"

"Nothing you'll enjoy." She gave him a philosophic nod. "Life is seldom perfect. But your have already admitted that you are only clones, endowed with your own peculiar immortality. Whatever happens in one life, you can always look forward to another."

"Clones are people." He spread his hands, pleading. "Clones can hurt."

She marked something on the slate and rang a bell to call the guard.

"Miss Teller, please!" Desperately he raised his voice. "You look human. Have you no human feelings?"

She stiffened and flushed in anger, but then sank slowly back into her chair. The guard appeared in the doorway, glanced at her, and vanished. She sat a long time staring blankly at us. When at last she spoke, her voice was nearly too low to hear, as if she were speaking to herself.

"Of course I feel." Her lip was quivering. "I remember a friend, a man I cared for, condemned for a mere political blunder. I appealed, but he had enemies. Once I saw him pulling a wagon on the street. I called his name. He couldn't turn or speak, but his bug looked at me. I know he heard. I know what he felt."

Turned pale, she slammed her hand on the shining desk and slumped down over it as if about to cry. In a moment, however, she was on her feet.

"That was then." Her voice hard and sharp. "This is now. I do have feelings, Agent Navarro, but they are no concern of yours."

She rang again for the guard.

THE IRON DOOR OF OUR CELL CLANGED AGAIN, AND we were left there alone in the stifling reek of the sewer ditch. I walked the narrow floor while Pepe hunched miserably down on the hard stone bench.

"*Que cabron!*" He swayed back to his feet. "Damn the Regent! Damn the bugs! Damn the whole stinking system! They'll find Casey and put the bug back on him." His fists knotted, relaxed, and clenched again. "If he knew Mona was free and in America, he could take the plane and look for her." Hopelessly, he slumped down again. "There's nothing he could do for us."

That thin blade of sunlight reddened and climbed the wall. I was still dismally wondering what sort of buyer June Shawn might find for us when we heard the tramp of boots outside. The door screeched open. Two tight-faced guards in blue ordered us curtly out of the cell.

Sturdy white males, they wore no bugs. I saw Pepe stiffen as if to make a break, but they wore weapon-clipped belts and kept a wary distance. They marched us down a long corridor to the back of the building, unlocked a heavy door, and let us out into a narrow cul-de-sac where two empty rickshaws stood waiting.

With a signal for silence, they beckoned us into them. Stripping off their uniforms, they stuck black beads on their foreheads, picked up the shafts, ran with us through a maze of alleys back to Moon Boulevard. Pepe grinned at me and raised two fingers in a gesture of elation. I sank back in the cushions, rejoicing in the fresh air and sunshine but hardly daring to hope for freedom.

Sirens were suddenly howling. The boom of a cannon echoed off the buildings around us. Our rescuers never looked back. As *stolid*

and wordless as actual slaves of the bugs, they threaded a way through the rickshaws and cycles and lumbering wagons, back to the arena. Guards at the gate glanced at a note one man showed him and waved us on toward the spaceplane. We jumped off the rickshaws, and the sweating men were gone before we could thank them.

"All OK?" I heard Laura Grail calling from the top of the stairs, smiling widely to greet us. Dressed in green-trimmed white and a green *hairband*, she was an unbelievable dream. "Let's go!"

We ran up the steps.

"Who are they?" Pepe gestured after the rickshaws.

"Friends." She beckoned us into the plane. "Or call them heroes of liberation."

"OK!" Casey shouted from the pilot's seat. "*Adios* to the Regent!"

The engines coughed and thundered. At the window, I watched the jet steam roaring out to hide the walls around us. The ship quivered and lifted. Slowly at first, but faster, faster, the arena and the red-tiled roofs of the city fell away below. When Casey turned from the instruments, I saw that he looked almost himself again. A glassy patch of sealant still gleamed over the little wound on his forehead where the bug had been, but no blood was seeping through.

"Where to?" Pepe whispered. "Back to the Moon?"

"America," he said. "Back to where I found Mona when we were here before."

His voice slowed when he spoke her name. I saw the shine of tears and thought I shared what he was feeling. Age after age, as we lived and died and lived again, the robots and our holo parents had given us a sense of immortality that left us very mortal. Cloned and brought up to be the selves we had been, we were never entirely identical, yet those past lives lay vivid in my mind.

We had slept four centuries since our escape from those vampirish black parasites in the red thorn jungle in Africa, yet the flight seemed as real as yesterday. Our great circle course had taken us north to the glaciers and then back south along the edge of the North American icecap until flat, brown tundra gave way to an exotic bluish green and we came over the strangely varicolored forests of what had been Chihuahua.

I had read the old records and listened to the holos until the haunting songs of the trees and the winged being that Casey called Mona were memories of my own. I recalled the young tree he named Leonardo and loved like their son. I asked Casey now if he meant to look for the Leo tree.

"After all that time— " He shrugged with misgivings, but old emotion glowed on his dark Asian face. "I don't know about the tree, Laura thinks my own Mona may be out there, fighting with the rebels to end the rider slavery. We'll find her if we can."

He turned back to his instruments, plotting our path. Taking off from a different point, we were on another great circle route, flying far north of the diminished Mediterranean. We were already high, and I found the rim of the north Asian icecap. Laura was brewing tea and warming squash-and-tofu packs she had found in the food locker. Pepe asked for more about the friends who freed us.

"We had heard of your problem with the Regent." She gave us a wry little smile. "My editor wanted another story if he could get it through the censors. I didn't want to see you with bugs on your faces. When I slipped back for another look at your machine, Casey let me in. We talked. And then— "

She paused for a glance at the sky beyond the windows, dark purple now, the white glare of ice and cloud far beneath us.

"I've never dared say so," she went on, "but we are what they call Scienteers. Or loonies. Or traitors to the Regent. Names they use when they can catch and bug us. We call ourselves colonials. If you care about our history, the colonists had a hard start. They landed in the vale. A lovely spot, fertile and well watered, secure inside its mountain walls, but too near the ice as it lay at the time.

"The first winter was severe. Unexpected avalanches buried their original site and nearly wiped them out. The survivors were able to build a lab and clone new people. The vale remained the center of what government there was as the colony grew, but communication was poor. The generations that began to settle farther south were at first independent, but they prospered. Those on the coast built ships and began exploring. Their future looked bright till they reached the shores of Africa and met the black masters.

"One of Arne Linder's descendants escaped from Africa with a bug in his head. Looking for a way to fight the masters, they learned to hatch the eggs and finally to plant them in people. Alfred Linder worked them on a plantation that covered Sri Lanka. His son Roscoe built a fleet of ships and found that trading fluorides to the masters paid better than war against them.

"That horrified the colonial government. They outlawed slavery, but Roscoe stayed out of reach. He changed his name to Arne, declared himself Arne the First, Regent of the Moon and legal ruler of Earth. His rebellion went on until his clone armies captured the vale. A few colonials held out along the frontiers. More migrated to America and set up a free nation there. His successor sent expeditions to make them slave territory. Regency politics!"

She made a sardonic shrug.

"The black masters need the Regents the way the Regents need them. With their alien biochemistry, they need fluorides to feed themselves, more fluorides than they've found in Africa. Their red thorn jungle keeps on spreading. They hide in it and ride their killer beasts out to snatch the men trying to burn it or hack it down, yet they can't afford to wipe the Regents out. As for the American war, it's pure politics, fought to spread rider slavery to one more continent." She shrugged forlornly. "That war they're winning."

"But Mona!" Casey turned from the controls, his voice grown sharp. "She's out there. We've got to find her."

"If we can." Laura looked doubtful. "It's a big continent."

I asked Laura if she knew any more.

"Not much. A mountain climber saw their flyer come down. He thought it was from the Moon. The news alarmed the Regent. They were hunted. Casey was another black clone, with no chance to escape. The Scienteers found Mona and got her on the underground railway to America."

"That's where she is." Casey nodded hopefully. "Fighting with the rebels."

"Where she *was*." Laura shrugged. "News from America is hard to get. Our Freetown correspondent has disappeared. His last reports were censored and delayed for months. My friends were willing to risk their lives for you, but I don't know— "

"We'll find her." Casey bent back to his instruments. "We must."

"You are immortals?" Her voice was hushed with awe. "Truly immortals from the Moon."

WE LEFT THE ICE BEHIND. BROWN MOUNTAINS ROSE OUT OF GRAY haze, and brown desert turned an odd blue-green. I saw Casey frowning over his charts, copies of those we had faxed to the Moon before we died here.

"The forest," I heard him mutter. "I can't find the forest."

I remembered the singing trees that must have come from somewhere off the Earth, remembered the balloons they had grown to carry their seed, remembered the gold-winged seed that Casey called Mona and the little sapling that had grown from her body after she died.

He studied his maps and studied the ground ahead.

"The forest is gone," he muttered again. "The forest where we landed."

I tried to look. The earth below looked flat and brown. I thought I saw flecks of color along the hazy horizon far ahead, snow on a mountain cone farther still, but not much else.

"See those lines?" He pointed, but I found no lines. "Railways, I think. They run south. Toward seaports, I imagine." He squinted ahead. "Confusing, but the rivers and the lay of the land should show us the spot were we came down."

He dropped us at last into bellowing steam. It cleared to reveal a bleak landscape. Huge stumps where trees had stood, all charred black, black ash around them. Bitterly silent, he opened the door and unfolded the landing stairs. We followed him down into blazing Sun and an acrid reek of fire.

Not far off, steel rails gleamed. He pointed north across the stumps, toward a plume of white smoke. We waited in silence while a steam locomotive thundered past. I saw a line of smoke-grimed clones passing great blocks of wood from the tender to the boiler. The engineer leaned out of his cab to stare and blew a whistle blast that startled me.

Enormous logs were loaded on the long train of flatcars behind it. We stood there with Casey in the hot, wet, reek of smoke till the last car had rumbled past. Then, without another word, he stalked across the tracks. We stumbled after him along the bank of a narrow stream when he stopped to stare down at one wide stump.

"That was Leo." His face had twisted under the glassy glint of the sealant over his rider wound, and his voice was hoarse and slow. "Our son."

Pepe reached to touch his shoulder. A flash of anger set his face, as if he thought we were about to laugh.

"I'm sorry," Pepe whispered. "Terribly sorry."

The anger gone, he turned back to the stump.

"I had to come," he muttered. "I had to know." He stood there a long time, staring down at the charred stump, and finally shrugged and swung back to us. "Not that it matters." He shook his head, and I saw tears in his eyes. "When you hear what I have to tell you now, you'll see that it no longer matters at all."

8.

CASEY STOOD THERE A LONG TIME SILENT, BENT DOWN over the black stump. Smoke and dust had turned the cloudless sky to copper, and a red Sun blazed hot on the charred desolation around us. The motionless air had an acrid taint of fire. Far off, a dust devil lifted a small black spiral. The only sound was the rush of the little stream over a rocky ledge behind us.

"Come." Pepe finally caught Casey's arm. "Let's go."

"Go on," Casey snapped harshly at him. "Leave me here."

We clambered back across the rails and climbed aboard the plane. When I looked from the landing, he was kneeling by the stump as if in prayer. Laura had stayed aboard. She made a fresh pot of tea and we sipped it while we waited.

"What now?" I asked.

Pepe shrugged. "*Quien sabe?*"

"Our correspondent reported the Moon Lady leading the rebels in this area," Laura said. "But that was months ago."

Casey came plodding back at last. He stopped on the landing for another long look back across the burned past before he came inside. Yet, seeming dry-eyed and composed, he sat down, and accepted a mug of tea.

"I'm sorry if I was sharp with you." Wryly, he shook his head at Pepe. "It's hard to say how hard this hit me. I've known the Leo story all my life, but I never quite believed it. Not till now." He nodded at the dark waste beyond the windows. "Not till I recognized that crook in the creek and found the little waterfall where the tree had stood." He grinned and sipped his tea. "It was nearly too much, but I'm OK now."

"Ready to look for Mona?" Pepe asked. "If you have a clue?"

"No clue." He shrugged. "Not really. But rebel refugees were reported hiding in the forest still standing west of us. I saw the color of live trees on the highlands west. We can hope she saw us. If she's still there. If she has time enough to get here."

"Time?" Pepe raised his voice. "You had something else to tell us?"

"Something I don't like to say." Casey drained his mug, set it down, and took a moment more before he went on. "You know Tycho Station was set up to watch for approaching objects that might impact the Earth. The computer is programmed to carry the mission on while we sleep— "

Sharply, Pepe broke in, "It has found something?"

"Nearly 40 years ago." Soberly, Casey nodded. "That's why we were cloned—the computer had meant to give the colony a thousand years before it sent us back to look."

"Why weren't we told?"

Casey shrugged. "It makes its own decisions."

"What about this object?"

"It's probably a drifter from the Kuiper cloud, out beyond Neptune." Casey frowned, careful with his words. "Some 30 miles in mean diameter. Big enough for the impact to devastate the planet, maybe erase all life. Any impact was uncertain at first. We were awakened just to be ready for whatever happened."

His face set harder.

"It's going to happen." He glanced at me. "Dunk, you know your holo father is sometimes the computer's voice. He told Mona and me before we left the Moon— "

"You knew?" Pepe stared at him, "and didn't tell us?"

"He said the computer would inform you of whatever you needed to know."

"The danger?" Laura whispered. "That's certain now?"

"He said it is. The early observations had been refined. The destruction is predicted to be total, with no chance for human survival. He advised us not to create a panic. The truth would disrupt the life of the colony to no purpose. Our errand was simply to file a bit of history that ought to be remembered."

"When?" She stared into his face. "How much time before the impact?"

He glanced at the watch on my wrist.

"Today is August 14," he said. "The impact is forecast for noon on August 17, Kashmir time. That would be about midnight here."

We sat in dazed silence for a time.

"Three days." Laura shook her head. "Just three days. So much to think about." She shrugged. "No use to think of anything, but I need to walk."

Pepe and I went with her down the stairs. We walked along the rail line, our feet stirring little clouds of soot-black dust. We didn't talk until I heard her brittle laugh.

"World to end in three days!" She laughed again, too loudly. "A great headline. Anybody who dared print it back at home would *have been* branded a Scienteer and bugged for high treason."

Pepe caught her hand, and they walked on together.

Casey had stayed on the plane, watching the dark horizon. Back there with him, we prepared a final transmission to the station. Laura dictated a brief history of the colony. Pepe reported our meetings with the Regent and the rider broker. Casey gave a terse description of his experience under the bug. I summed up our situation and sent the message when the Moon had risen.

That night we took turns on guard. We saw nothing till early next morning Casey found a smudge of smoke up the railway north of us. It became another train, approaching slowly as if wary of us and halting a few miles away. With binoculars we made out half-a-dozen flat cars crowded with black clones in military gear, a long-barreled cannon on the last car. The gun crew trained it on us.

"We're dead," Pepe muttered. "If they fire."

They didn't fire, but presently a little rail car came on toward us, flying the green-and-white regency flag. It carried a white officer and two black clones pumping handlebars to drive it.

"They're here to kill us." Pepe looked at Laura with a sudden grin, and turned anxiously to Casey and me. "Let's take off for the Moon while we can."

"Not quite yet." Casey shook his head. "I won't leave Mona. Go on

if you like. I'm heading into the standing forest west on the chance she's there." He looked at me. "Coming with me, Dunk?"

"I'm coming."

We found a canteen and a few ration packs. Laura hugged us both. Pepe shook our hands and wished us luck. The officer on the handcar fired a handgun as we crossed the track. The bullets sang past our heads and we tramped on. A few miles across the stumps we came into trees still standing, but dead.

"You should have seen them live." Casey shook his head in dismal regret. "They were magnificent. Somehow sacred."

They had been magnificent. The straight black trunks, thicker than the body of our plane, towered up forever, and my neck ached from craning to trace the dense web of dead black branches that laced the sky. A thick carpet of unburned leaves covered the ground, spicing the air with an odd fragrance of decay. In the heavy and depressing silence, I felt an awed sense that we were entering an abandoned temple, built for the worship of some dead and forgotten deity.

There was no sign of fire here. I wondered what had killed the trees.

"They were sentient," Casey said. "Sentient and all of them kin. I think they were all a single conscious being. Even the ground cover somehow belonged to it. If you won't call me crazy, I'd say it died of grief."

Tramping on, we came through a stand of trees where leaves still hung, though yellowed and bleached. Farther, we climbed a rise and came out that dead silence into a murmur of life. The ground was still covered with a soft, moss-like, blue-green carpet, the high canopy still bright with live and varied color. Although there was no wind, I heard a faint sighing in the treetops and then a note of song, high and faint and far away.

"They know us." Casey stopped. "They remember Leo."

We stood there a long time, listening. The song swelled louder till it filled the forest, a changing melody I had never heard, somehow touching me with emotions I had never felt. I saw rapture on Casey's lifted face, as if it moved him deeply. Fading finally into silence, it left me with a painful ache of emptiness and loss.

He turned solemnly to me.

"They know Mona," he whispered. "They are reaching to find her. If we wait, they will try to guide her."

We waited. When I asked how long she would be on the way, he shrugged and said the trees had no language of words or numbers, no human sense of time. Later in the day they sang again, still with no meaning I could catch though sometimes I caught a sense of aching sorrow. We drained the canteen and finished our ration packs. When darkness began to thicken, we went back a little way to gather armfuls of the great dry leaves to make a bed. The voice of the trees had faded into a stillness that seemed hushed with expectation. Listening uneasily for anything, for Mona's voice, the boom of the cannon on the flatcar, the thunder of the plane lifting off without us. I heard nothing at all.

All next day we waited. The trees sang again, sometimes with slow and solemn rhythms that pierced me with wordless pangs of loss and death and left my mind filled with sharpened images of the desolate desert of dead stumps and the fires that had charred the land. Yet toward the end they puzzled me with a thunderous chorus that seemed to echo a solemn triumph.

"They know about the asteroid," Casey said. "Perhaps they sensed it. Perhaps Mona told them. They are grieving for themselves and their failure here, but not for us or the future of Earth. They have felt the evil of the black masters and sensed a sort of justice in their destruction. Happy with that, they will live on in the greater being that set them here. Although the loss is painful to them, they can accept death as the dark side of life. They expect the future of Earth to be better than its past."

That second night was endless. I heard no wind, no voice from the trees, yet sometimes I thought I felt a ghostly presence in the faint moonlight that filtered through their branches, something so elusive that it vanished when I tried to grasp it. Listening in vain for any sound at all, I dozed and woke to a sad conviction that we were insane, trusting our lives to the imagined mind of a dying forest.

"It's the last day," I reminded Casey when he woke. "If Pepe and Laura still have the plane, they can't afford to wait till the impact kills them. Shouldn't we get back?"

He got to his feet, stretching the stiffness out of his bones.

"Mona's on her way," he insisted. "We have till midnight."

That brought me small comfort, but I waited with him and felt a little relieved when I heard a soothing crooning from the trees and then the plop of something falling. He walked away and came back with two of the big golden fruits that I recalled from our lives here. Their tangy sweetness eased my thirst and hunger, but the day seemed a century. Daylight was fading from the treetops when we heard a distant shout.

"The Regent sees no good in this electricity, whatever it is, or any of your magic off the Moon." "Don't you believe us?"

Casey answered, and a little band of ragged, wildly bearded men emerged from the thickening dusk. They carried crudely forged swords, rough lances, a few stolen military weapons. One had his arm in a blood-clotted sling, another was stumbling on a broken branch. Two or three were black clones, dirty headbands hiding the scars where their bugs had been. Cautious of us, they stopped under a tree some distance off.

"Casey?" A hoarse and anxious voice. "Is it you?"

"Mona!" Casey yelled. "Thank God! Or thank the trees."

Her companions stared at us for a moment and melted back into the forest.

She limped on toward us. In tattered fragments of a jacket and jeans, she was drawn thin, dark with soot and dried blood, her filthy hair jaggedly clipped. Yet her white teeth flashed in the dusk with a smile as bright as it had been on the Moon.

She hugged me briefly before Casey took her in his arms. With no time for talk, we helped her back through the dying trees and the dead into open moonlight. The spaceplane stood where we had left it, a thin silver pillar on the stark waste of stumps. Before we reached the stairs I heard a faint and far-off chant from the trees behind us and thought I caught a monody of fond farewell.

Laura opened the door to let us in. Grinning with relief, Pepe shook our hands, sealed the door, tumbled into the pilot seat. The jets bellowed. The ship shuddered. We lifted toward the Moon. When we were safely aloft, I asked Laura what had become of the Regency force.

"The officer was after the plane," she said. "He offered to let us go free if we surrendered it intact. He didn't want to believe me when I tried to tell him why he didn't need it. Pepe invited him aboard and let him call the Moon. The answer convinced him. He got back on his train and went back the way he had come."

Pepe glanced at his watch and turned back from the instruments.

"We're on the way." He nodded at Laura, with a grim little grin. "Time enough left to get us well clear of the ejecta and give us a good view of the impact from high orbit." He made a wry face at me. "A black chapter, Dunk, but we'll be alive to try again." □

With aliens ravaging Earth, it was left to a humble paleontologist to save the world.

homeless, WITH ALIENS

NO. 1: IF YOU BECOME HOMELESS, FIND WAYS TO STAY WARM.

By M. Shayne Bell
Illustration by Joel Naprstek

The morning the aliens flew into Salt Lake City, I became homeless. It was my choice. Most middle-aged women probably wouldn't have made that choice, but I did. I hadn't known what I would do till then, but in the news from other cities I'd seen what the aliens would likely do. When the sirens and bells went off it suddenly occurred to me that if I left practically everything—my books, furniture, clothes, food, condo, pickup—and went to live on the streets, the aliens might leave me alone, might pass me by, might not think I was trying to stop them from taking whatever of mine they could possibly want, because it would look like I didn't have anything to want and I might not get one of their sharp little hands shoved between my ribs and my heart torn out and my breasts and tongue slashed off and eaten.

I was wrong, of course, at least about being left alone.

I kept my gear organized on shelves, and it didn't take me long to shove what I'd need into a backpack and two shopping bags and head out the door—which I locked behind me, not wanting to make it too easy for them if they wanted in. The street was wild with traffic, people heading any way they could out of town. Other people stood at open windows in their apartments and condos in the fall cool looking out over the valley or staring up, not knowing what else to do, and I thought: I've at least got a plan.

But it wasn't much of one. I didn't know what to do next. I'd never asked myself what a homeless person did after locking the front door for the last time except find food and stay warm.

I started downtown, which is where most homeless people end up, but as I walked along I watched 20 silver, oval ships settle into position above the skyscrapers. By the time I'd reached the bottom of Second Avenue, I'd decided I wasn't taking another step in that direction. The mouth of City Creek Canyon is right there, ending in a new little park with stone bridges and manicured trees. I started up City Creek toward the Watershed Protection Area in the hills north of town. I'd feel better with rock at my back at night anyway, not cement or brick. People had called me crazy, but I truly lived for my days and nights hunting fossilized insects on the Mongolian steppes or in the Utah backcountry. I wished I was out there now, either place, away from this city and the aliens—

And right then three aliens rushed out of the white and peach gingerbread Victorian on Canyon Road, hands dripping blood and mouths chewing and arms full of dolls and cooking pans and an unopened 12-roll family pack of toilet paper. There was screaming coming from that house. I stepped off onto the grass while

the aliens ran down the sidewalk. One stopped to stare up at me, the one with an undressed brunette baby doll crying in his arms and Nurse Barbie and Malibu Barbie. I dropped my bags at his feet and started to take off my backpack. I was shaking so badly I could hardly pull the straps over my shoulders, but he turned to run after the others. People made a wide path for them all.

Someone actually fired a gun—some fool on the seventh floor of Canyon Road Towers started shooting at those three aliens and maybe hit one: The gray-green little bastard with the toilet paper dropped to his knees, then got up and kept hold of the toilet paper and started running again as if nothing had happened. I grabbed my bags and ran in the opposite direction.

I was no doctor. I could not help in the gingerbread Victorian. They needed medical help there, not a paleontologist. Other people were running into that house who maybe could help if there was anything to be done, and I heard sirens—the phones were still working to call 911. People would probably let an ambulance through, panicked though they were.

But what was heading this way once shooting started was anybody's guess. We all knew from the news, at least we all should have known after what happened to every army in the world, that the last thing you wanted to do was shoot at them.

I headed straight up City Creek through Memory Grove, but once past the city I cut up to the ridgeline trail and took the high ground. I did not want to be down in the canyon for anybody, including aliens, to see me coming. I wanted to see things coming my way first.

By nightfall, I was 12 miles out of town. I'd tied my shopping bags to the back of the backpack, and I walked along across a little plateau fragrant with fall wildflowers—and one of their ships settled onto the flowers and grass ahead of me, scorching them and sending up a smell of burning.

I thought I was too tired to run, but run I did. A bright light followed me, and aliens followed, running fast, closing the distance. What did I have that they wanted, I wondered, and I hoped it wasn't my sweaty breasts. I dropped my pack and ran on about 20 feet, the light trained on my every step. It was no use. I sank down in exhaustion and shaded my eyes. Seven aliens swarmed across the grass and tore open my pack and threw my gear around and strapped my clean bras on their heads and chittered and ripped and tore and scattered and one of them came up to me and said "Got rocks?" I picked up pebbles from the ground and tossed them at his feet. He kicked them back, stepped closer to stare me in the face, and took hold of my breasts. "Got bug rocks, Missy?"

"Not here!" I said, shoving his hands away.

He kicked my legs, hard. I tried to stand but the others swarmed up and held my shoulders down, bras waving back and forth on top of their pointy little heads. One of them noticed the ants. I'd sat down maybe three steps from an anthill, and we'd stirred them up in the night. The first alien cooed and put his hands down near the ants and let them crawl over his skin. He held up his arms in the moonlight, and all the aliens cooed and went to touch his arms and pass ants onto their hands and fingers. They stared at them, transfixed.

I crawled away, then stood and walked back toward the city. They didn't follow. When they were out of sight, I ran—down into the canyon, into the brush, into the trees along City Creek. What had they meant about bug rocks, I wondered—and had they meant fossils? Did they somehow know I *studied* fossils—and how would they have known that? How would they have known I was a paleontologist? I had no way of knowing the answers, and I ran and ran, and walked, and ran.

And sometime around dawn I thought I hadn't done too badly my first night as a homeless woman. I'd run and walked all night, and because I'd never stopped moving I'd stayed warm.

NO. 2: IF YOU BECOME HOMELESS, LOOK A LITTLE CRAZY.

The shelter was not deserted, and when I went there for food the next night they had food to give me: an apple, half a Swiss cheese and mayonnaise sandwich. I couldn't go home—if there was any chance the aliens knew about my work and wanted something from me, I could not go back to my condo. They'd look for me there. They might be waiting there. I could not go to my friends. If the aliens could find me in the hills, they could find me in the city. Staying with friends might put them in more danger than they already were. I had no money or credit cards since I'd left my wallet in the backpack, so I was truly homeless—me and half the city now after all the burning. I looked like I'd been homeless for years: I was dirty; my clothes were dirty; and I had nothing, not even a shopping bag.

"They're sleeping three to a bed upstairs and all over the floors," the lady at the shelter told me, "but I'm sure we can find you a space."

"I don't want a space," I told her. I took my food outside and ate it standing on the sidewalk, hands unwashed, smoke rising from the City County Building, the State Capitol, Primary Children's Hospital, ZCMI Mall, the old Mormon Assembly Hall, Canyon Road Towers, countless homes. The streets were deserted of cars: The aliens had started blasting cars from their ships—the highways were choked with wreckage—so I was stuck in the city with everybody else still alive.

I went back into the shelter for a blanket. "Why are you here?" I asked the lady at the desk. "Why did you come to work?"

"What else was I supposed to do?" she said.

I had no answer to that.

"Be careful out there," the lady told me.

"You be careful in here," I said. I walked away through the smoke, the screams, the sudden silences, sticking to shadow to avoid the little gray-green forms darting in and out of buildings. I eventually camped underneath the bed of an overturned pickup without bodies in it, but the night was so cold I couldn't sleep. I lay shivering in my blanket, hungry and miserable, thinking of nights like this I'd spent in the San Rafael when, despite the snow, I'd stayed there digging fossils so delicately preserved you could study the antennae of the termites, the multifaceted eyes of the beetles, the patterns in the wings of the giant dragonflies.

And a light settled onto the street beside me.

Oh God, I prayed, trying to crawl out from under the pickup—help me, God—but aliens swarmed on both sides and I was trapped there, aliens reaching hands in toward my chest and chittering and saying things in English.

"Got rocks, Dr. Massey?"

"Bug rocks."

"Rocks."

I blinked tears from my eyes, determined at least not to cry out of fear in front of them. They chittered on about bug rocks. "You want fossils?" I asked them. "Rocks with insects in them?"

"Bug rocks, Dr. Massey."

Seven aliens swarmed across th and chittered and ripped

"Bug rocks."

"Will you leave Salt Lake if I give you bug rocks?" I asked.

I don't know why I said that, but I was scared; I was desperate; and I wanted them away from me. It wasn't the first time I'd bargained with thieves, either. I'd once been fool enough to barter through an interpreter with brigands on the Mongolian steppes, us broken down and stuck in the mud, them driving an ancient jeep and riding horses. Now I found myself bargaining with these thieves. They chittered among themselves, and one spat at me, eyes big and bright in the light, glaring and angry.

"I know where to find bug rocks," I said. "I've found lots of them and I'll give them to you, but if I do you have to leave this place and never come back. Otherwise, find them on your own and good luck."

Suddenly they all left, but the light didn't. I watched their spindly legs scurry away out of sight. After a time, I peeked out from under the pickup. One of their ships was hovering maybe eight feet above the street. The aliens were heaped on top of each other under it, not moving, chittering softly and squirming around. One looked up at me. "Warm," he said, patting the pavement next to him.

And so it was. I could feel the warmth from the ship. I didn't think they'd sleep in that warmth if it were radioactive.

They all sat up. "Rocks, rocks, bug rocks, rocks, rocks," they chittered at me.

"You'll leave this city? All of you?"

"Yesssss," they said in unison.

"Do you want them now, or in the morning?"

"Morning," one said.

"Morning, morning," they chittered.

ne grass and tore open my pack and tore and scattered.

Then they settled back down, but a lot of them kept looking at me. "Warm," one said.

"Warm here," another said.

"Warm, Dr. Massey."

"Is the warmth radioactive?" I asked.

"No!"

"No, no, no," they said.

I cursed all the papers I'd published. I cursed the species of fossilized insects I'd classified. I cursed myself for a fool and thought how crazy I must look to anybody who might be watching, but even so I took my blanket and walked over to them and lay down on the pavement in the light of their ship and the warmth from it and the warmth from all their little alien bodies and I slept and they slept.

NO. 3: IF YOU BECOME HOMELESS, WATCH YOUR BACK.

We walked to my lab. They didn't offer me a ride in their ship, and I didn't ask for one. People stared at us as we walked along, me in the lead and 17 gray-green little aliens fanned out behind me, streetlights blinking off as we went ahead in the brightening dawn. We made quite a parade.

Along the way, we passed a discount electronics store. It had one TV still running in the busted-out window display. The CBS Morning News was on, broadcasting from Boise, and I didn't care what the aliens thought, I stopped to listen. The news showed the horrors the aliens were committing in Chicago, Delhi, Arusha, São Paulo, North Platte; then the announcer read a list of 70 cities where the same things were happening. A red dot blinked on a world map with every name, Salt Lake one of those dots. The broadcast moved to a panel speculating about why the aliens had left our satellites alone, then they started showing pictures of the Serengeti Plain littered with the corpses of thousands, maybe tens of thousands, of wildebeests—all dead. No one knew why.

"You did this, too, didn't you?" I said to the aliens.

"Did what, Dr. Massey?"

"What?"

"Did what?"

They hadn't been paying attention to the news broadcast—they'd been tossing around shards of broken glass—so I pointed to the TV and made them look at the dead animals. "As if you haven't done enough to us, you've killed the animals in Africa. Why? Why did you have to do that?"

"Not us, Dr. Massey."

"Not us, not us, not us," they chittered.

"What then?" I asked. "Those animals were doing just fine till you came." I didn't mention poachers or madcap dictators willing to turn national parks into private hunting reserves.

I turned and started walking again. "Not us. Not us," they kept saying, and I ignored them.

We reached the University of Utah campus, and most of it was still standing—but what a mess it was: papers and books and chairs scattered everywhere on the lawns and all the windows busted out. My office was what you'd expect—if a cyclone had hit it it would have dealt a kinder blow. The lab was in worse shape. "What did you need me for?" I asked. "You mean to tell me you couldn't find your precious bug rocks after you made all this mess so you had to come find me to sort it out for you?"

They actually looked abashed. I didn't know how far I could push them, but I was angry at what they'd done and at what they were doing—to me and to everyone, to the animals in Africa.

We were standing in what had once been a decent, even decently funded, paleontology lab, a huge, cavernous warehouse of a building where my preparators and I and all the other professors and their preparators and the curators had stored and studied and labeled and taken notes for articles on all the specimens we'd found in Mongolia and Patagonia and Utah. My colleagues and I had stored our specimens in trays and boxes on metal shelving 15 feet high, and the aliens had knocked those over like dominoes. All the specimens lay heaped on the floor amid the twisted shelving, looking like nothing more than dusty rocks. The electricity was on, but the lights flickered and I didn't trust them. I did not want to walk back into the black cave the building would become if the lights went out, alone as I was with aliens. They'd scattered among the piles of rubble, picking up rocks and looking at them and tossing away anything that didn't interest them for longer than two seconds.

"Be careful with those specimens!" I said, but none of them would look at me or stop throwing fossils.

One of them touched my hand. I jerked it away, surprised. "Bug rocks," he hissed.

"You'll get them," I said. "But in this mess you've made, it might take me a while."

Someone screamed. Six aliens started jumping up and down on rocks not far away, hissing. I rushed over. "Don't hurt them!" I shouted. "If you hurt these people, I will not help you get bug rocks."

The aliens quit jumping, but they kept hissing and pointing and curling their sharp, long fingers. It was Ann Sanders, one of my prepara-

tors, and a young man, both of them wrapped in blankets. I walked through the ring of aliens after them. "Stand up," I told them, and when they did I put my arms around them. "Now walk out with me."

We stumbled over the fossils and shelving to the front of the room, the aliens following, hissing. "These people work for me," I told the aliens, which was partly true, at least in Ann's case. "You must not hurt them."

If anything, the aliens hissed even more.

I turned around to face them. "Are we agreed?" I asked. "Or do I leave you now?"

"Agreed," one of the aliens finally hissed.

"Agreeeed," they all said.

"Then stop hissing," I said. "We humans have work to do. Stay out of our way."

I don't know who looked more surprised at my orders, the aliens or Ann and her boyfriend. I needed things from my office. "Come with me," I told the two humans. I couldn't just send them after a flashlight and the recording gear—I wanted to keep them in sight to make sure they were safe. "We'll be right back," I told the aliens.

Of course they followed us.

"You must be Tom," I said to the boy as we walked along.

He nodded. "But Dr. Massey, how—"

I told them what had happened and about the bargain I'd struck. Eventually we found my flashlight under books thrown on the floor, and the mike I clip to my collar, and the little recorder I use to record my comments and ideas while I work. Then I walked Ann and Tom to the front door where I could watch them walk away across the lawn and watch the aliens to make sure they didn't run after them. It was the best I could do for their safety. When I couldn't see Ann and Tom anymore, I went back to the lab and started stepping over the piles of stones—all of them fossils, some of them priceless—heading for my section. The aliens began sorting through the fossils again on their own. "Dinosaur rock," they'd say in disgust, then throw the fossil against the wall.

"Reptile rock," they'd chitter before throwing a specimen onto the floor.

"Dinosaurs, dinosaurs, dinosaurs," they'd chant, and then spit.

That they knew about dinosaurs at all made me wonder. "How do you know so much about past life on this world?" I asked them.

They just looked at me. They wouldn't answer. Answering my questions, after all, was not part of our bargain. I started looking again for my fossils, and they went back to throwing around dinosaur bones. When I needed help, they helped me pull aside the twisted and bent shelving, and I found my specimens. I'd know them anywhere, of course, even in a mess. "God damn you—you broke this one," I said, and I held up the two pieces of what had once been a perfect *Meganeura monyi*, a giant dragonfly, with its three-foot wingspan. I handed the pieces to one of the aliens. "You broke off the right wing," I said.

All the aliens sucked in their breath and held it. The hands of the one I'd handed the giant dragonfly to were shaking. "Don't drop it," I said. "Put it down if you can't hold onto it."

He did set it down, and he stood watch over it while the others cleared a space on the floor where they set out all the specimens I handed to them. It was a small, precious collection—precious to me, anyway. Insects are such poor candidates for fossilization that there never have been many to study, not in the ambers, not in the rocks. It was how I'd made a name for myself. I'd discovered the earliest fossilized termites—in Permian rock, something people had had theories about but hadn't proved. The oldest rock they'd found termites in before my work was Early Cretaceous. My termites had been a new species, too, and huge. I was giving up these specimens and others to buy Salt Lake and me a little time, but I hated to do it. I didn't hand them everything.

They stared at the bits of ancient life I did give them in awe, and they chittered softly, almost reverently, around them. Their fascination with insect fossils made their disdain for every dinosaur fossil seem odd. Why the difference? Why hate one kind of ancient life and love another? Wondering that made me wonder how much they knew about dinosaurs, anyway. I figured they knew a lot.

"You know what killed the dinosaurs, don't you?" I said.

They deflected my question. "Bugs not dead," one said.

"Got ants, got dragonflies, got beetles—"

"Yes, but we don't have the great reptiles, do we? Or the great amphibians—what about them? You know what happened, don't you?"

They stopped chittering.

"Tell me," I said.

They said nothing.

"Did an asteroid or a comet kill them?" I asked.

They were quiet for a time. "All die off," one said.

"I know that," I said.

"Mammals now."

"Mammals!"

"Mammals die, die, die," they chanted.

Something had just turned off in they died. Everybody blame

"Why?" I asked.

They just looked at me. Then they started picking up the fossils and heading for the doors. Eventually I followed them, turning out the lights as I went. When I walked out onto the sidewalk, they were gone. Not a thank you. Not a good-bye. Not a good luck to you, mammal, because you'll need it.

I looked up at the sky and wondered what they knew that we didn't. What was maybe sneaking up on us that drove them here to take what they could while they could? Or what had they loosed upon the Earth that was killing all mammals? Thinking those thoughts—wondering those things—my mammal body shivered and grew cold.

NO. 4: IF YOU BECOME HOMELESS, GUARD PERSONAL SPACE.

They didn't leave. Their ships hovered over downtown through evening and into night. I grew more and more angry at the sight of them, and I started thinking: What do I have to lose? I headed downtown.

Downtown was deserted, busted-out windows and wrecked cars and bloated bodies everywhere. I wondered if the aliens hated cars so much because bugs splatter across their windshields—because cars are bug killers. I walked under seven of their ships and shouted up at them, but nothing happened. I started hearing what I thought was chittering in the dark, but it wasn't them, it was the TV in the discount electronics store playing news bulletins: aliens in Paris, aliens in San Antonio, aliens in half the world, all the adult sheep dogs in Tierra del Fuego and Australia dead overnight, and the adult sheep dogs in New Zealand and Idaho and Wyoming sick and listless and dying, too—but no infection, no canine pandemic, no poisoning that anybody could detect. Something had just turned off in sheep dogs of a certain age and they died. Everybody blamed the aliens, but I wondered. For as long as I remembered, whales had beached themselves around the world for no clear reason. Last

Christmas, my father had told me the American Cattlemen's Association had reported the 14th year of drops in live births in cattle. Human sperm counts had been dropping for decades. What was going on with class *Mammalia*?

And how did insects fit in?

I found the aliens in Liberty Park, or rather, I found my fossils set out in a neat row on the sidewalk and I knew the aliens could not be far. They were attracting moths with a light and catching the moths in jars. "Punch holes in the lids, or they'll die," I told them. "They have to breathe."

They hissed greetings at me: "Dr. Massey, Dr. Masssssssey, Dr. Massey."

"We had a deal," I told them. "Why haven't you left?"

"Got catch bugs!"

"Take live bugs!"

"Bugs, bugs, bugs, bugs, bugs," they said.

I started helping them, the sooner to get rid of them. We caught ants underneath picnic tables. I took them to garbage cans where they caught flies. Their hands were so fast they could follow the sound of a cricket and snatch it out of the shadows.

And the puzzle started to come together in my mind. I turned on my recorder. "You want live bugs and stone bugs," I said.

"Yes, yes, yes," they chittered.

"You want specimens of the one thing that's never had a truly big die-off on this world—insects."

They stopped whatever they were doing to stare at me. I was lying, of course: Earth evolved two types of life that haven't, as far as we know, suffered a mass extinction—we have class *Schizomycetes*, the bacteria, besides class *Insecta*. But I did not want to give them ideas. Mammals also haven't gone through a natural extinction on the scale of the dinosaurs, but the aliens seemed to think such a thing was upon us.

"Smart mammal," one hissed.

"Smart, sssmart, smart," they hissed, then they were quiet, staring at me.

"On any world," one said, finally.

That stunned me. Evidently, at least as far as these aliens knew, insects were the only species *anywhere* to be so lucky. Nowhere else had anything like them to study. It was clear now why the aliens had come to Earth. "So it won't be just amphibians, reptiles, now mammals," I said. "Your day is coming, too?"

They held up their jars with insects in them. "Maybe not," one said softly.

"Maybe not, not, not," they whispered.

Theories flashed through my head. Perhaps DNA combines and evolves and works for, oh, one hundred, two hundred million years in a given class, then it gets too garbled—its combinations produce more errors than viable organisms—and the class dies off. "It's the DNA, isn't it?" I said. "It never was an asteroid or a comet."

"DNA, Dr. Massey."

"Sssmart mammal. Smart."

"DNA."

So they'd come here to study a species that hadn't suffered a mass extinction—probably to try to find a way to extend the life of their own species, or maybe class. We should have known what they knew, I thought, and maybe we would have realized it on our own, given time. We'd known for decades, after all, that dinosaurs in Australia had survived millions of years after the comet or asteroid or whatever hit the Earth had done its damage. Something else had reduced class *Reptilia* to the comparatively few examples we currently have. I turned the recorder back on. "How long does a die-off take?" I asked.

But I had almost all the answers from them I was going to get. They ignored that question. I tried one more. "What mammals will likely survive?"

They wouldn't answer that, either, or so I thought. I gave up and turned off the recorder, something I've always regretted. One of them hissed, at that moment, unrecorded: "Ratssss."

No. 5: IF YOU BECOME HOMELESS, KEEP SECRETS.

By morning they had lots of bugs, and by noon they kept their part of the bargain. They never came back to Salt Lake City, but they spent most of the year terrorizing the rest of the planet; then they spent two years collecting on Mindanao, in the Amazon Basin, in the ruins of Shanghai and Isfahan; then they all left. I spent a year in Isfahan with all the teams trying to figure out what was unique about insects there—living or fossilized—and we came up empty-handed. But there was something, we figured. We just hadn't found it yet. Shanghai ended up having eight aquatic insects, two flies, one cockroach, one beetle, and two moths all endemic to the city—and who would have imagined such a thing? I'm leaving for Shanghai next fall to study the fossilized insects they're finding in the quarries the aliens left behind.

sheep dogs of a certain age and
d the aliens, but I wondered.

And they'll be back, we figure—they, and others like them. When they come, we hope to show them a few surprises. One will be a planetary defense system. Another will be that we'll still be here. A third will be plenty of other mammals besides rats with us. The aliens have their insect specimens to work with. We have everything on the whole Earth—with at least two types of persistent life to compare. We'll find the antidote to DNA meltdown, too. We know now what to look for. We know how little time we have. We know how hard and fast we have to work.

When I walked into my busted-up condo the day the aliens left Salt Lake, I had an idea what I'd find missing. The TV, the VCR, the microwave, the computer were all still there, if shattered and ripped apart counts as still being there. It was my personal collection of fossils that was gone: my own *Meganeura monyi* I'd displayed so proudly on a stand on the piano, the *Acrididae* from their display cases, all the *Mastotermitidae*. The only thieves I knew who'd take fossilized bugs and leave television sets weren't from this world.

Early the next morning, I walked up into the hills to see if any of my gear was worth retrieving. It was. My backpack was thrown off in the scrub oak and still there. My bras were tromped down in the mud, but washable. The tin cooking gear was scattered here and there. I picked it all up.

Something had been eating the food. From the little tracks, I knew it had been rodents—not rats, I was too high up, but deer mice. What a feast they'd had: lentils, bread, dried humus, salt. I didn't begrudge them any of it. I sat there and looked at their tracks and hoped we'd find the antidote in time for them to survive with us.

The aliens hadn't found what I'd hidden in the backpack. There's a pocket inside it, camouflaged at the bottom, a good place for passports and cash. I unzipped it, and what I'd packed into it in my haste that morning was still there: my lovely little section of fossilized termite mound, one hundred million years old, the termite pupae still in their home after all this time. I held them, and sat in the westering Sun, and listened to the pleasant buzzing of mosquitoes and flies. □

If aliens

The Fish Merc

By Tobias S. Buckell
Illustration by David Beck

hant

LI HAO-CHANG, standing in front of a colorful array of fresh-caught fish, bargains with a Cantonese peasant over the price of yellow-tailed sn[illegible]. Where the Wharf tapers out, and [illegible] low for the larger trawlers, the fish market thrives over a p[illegible]

The peasant finally offers enough yuan to satisfy Li.

[illegible]

[illegible]

Li doesn't smile. [illegible] are. All men can be greed by discovery, for Li there is selling fish. He has to make enough to pay rent, to eat, and to save. If he doesn't sell enough fish for rent, the local thugs come over to beat him up. If he doesn't make enough to eat, his wife goes hungry, and if he can't save, he'll never be able to leave Macau and the smell of fish that seems to haunt his life.

The frenzied noise dips slightly near the stall. Li looks up from tossing [illegible]

to see what it is. A dark figure in a duster, moving through the fish stalls with a quiet confidence.

Pepper.

The man called Pepper stops and sniffs. Li knows the air he sniffs is alive with fish, and street sewer, and sweat. And something else. On the edge of all the sandpapery shark and still-croaking grouper is the smell of fear.

Li Hao-Chang watches Pepper carefully. Li stands nervously behind his untreated plywood table glistening with fish juices, and keeps his eyes averted.

Maybe the mercenary senses something, maybe his reflexes are keyed up beyond belief, a soup of tailored chemicals thudding through his bloodstreams. Maybe he is about to reach beneath the heavy folds of his dark-gray oilskin duster and pull out a massive shotgun.

Pepper's steely gray eyes roll over the street and bore into Li Hao-Chang.

"Afternoon, Hao-Chang."

His voice is as artificially gray as his eyes. All are carefully designed with respect in mind. Li knows Pepper sure as hell isn't here to buy grouper.

"Afternoon, Mr. Pepper."

Li is careful to keep conversation at a minimum. Pepper is usually not out in the street to chat.

Pepper looks around the surrounding stalls, his presence cutting through the babble of the crowd. The kaleidoscope of multiracial faces washes past Li's table, their differences slight in comparison to Pepper's own contrasting strangeness. Rastafarian mercenaries do not seem to belong in any landscape, let alone Macau. His leather duster hangs low, the soft rain running off in rivulets and his half dreadlocks are tied back into a ponytail.

Li notices slight movement in the far distance, the crowd jostled by someone, and his ears catch the distant delayed puff of a silenced weapon. Pepper's body jerks sideways, and he crumples to the sidewalk. A peasant hurries past, ducking. The man who steps forward out of the crowd pockets his gun, then leans over. Li can hear the distinctive British lilt.

"Oy. He's down."

A silver armored Rolls Royce with tinted windows quickly parts the wave of panicked fish buyers. The rear doors open forward, and the mercenary is pulled across the cement, up into the car. The Brit has enough grafted muscle to have trouble getting into the Rolls.

Li looks down at spotted grouper and waits for the Rolls to leave. When he looks back up, there is only an empty sidewalk in front of his table.

"Ni hao," he mutters to himself. The sidewalk is not entirely empty. A small disk lies near a puddle of thickening blood, already rust colored against the dirty cracked concrete of the wharf.

Li darts out to pick it up. Pepper haunts the wharf regularly. If Li does him a favor and saves the disk, then maybe Pepper will do him a favor.

The disk, covered in green symbols Li doesn't understand, makes a "snick" sound as he picks it up. He looks down at his finger to see a point of blood, and thinks maybe he has cut his finger on a piece of glass.

Li Hao-Chang returns to his stall and puts the disk into his purse. Maybe Pepper will pay him yuan for the disk.

If Pepper returns ... he thinks, dabbing at the cut with a piece of newspaper.

But Li has faith in Pepper. Pepper gives off a mystique of calculated invincibility. Pepper walks the Wharf, and the Wharf stays away from him. All the local gangs, no matter what color. Tan Italian, pale American, each learn Pepper's skills the hard way. They never try again.

Blacks are particularly nervous around him. Pepper is chocolate, with a white's gray eyes. He shows no ties to skin, he kills black as efficiently as white or any other shade. They call Pepper the black ghost.

The black ghost, because after every battle, no matter the injuries, Pepper comes back to life. How many back-up blood pumps are laced through his torso? How much artificial adrenaline is produced by small chemical factories in his stomach? Are his eyes really spliced hawk gene? Rumors trickle.

Li Hao-Chang has seen this scene before. Pepper will be back.

LI HAO-CHANG gets home early and hands Mei two snappers.

"Yi qi chi fan ke yi ma?" he asks very formally of his wife, as if they were meeting for the first time. Mei smiles and curtsies.

"I would be honored to have dinner with you." She has rice already boiling in a wok; the fish can be chopped and sauteed, then mixed with rice. She is used to fish. Fish boiled, fried, baked, or cooked in any manner she can think of. Fish broth she gives to him in a thermos for lunch. And breaded fish they eat for breakfast before he leaves.

Li knows she hungers for a beef stir fry almost as much as he does, but they are saving the money for the trip. Out of Macau, and over to Manila, then to the United States of America.

"Wo ai ni," he says softly, kissing her hair. She laughs and pulls away with the fish.

"Let me cook the fish, Li, then we can talk of love over rice."

Li smiles and pushes through the beads into the washroom.

"Pepper was at the fish market," he says, scrubbing away at the smell of fish vigorously. It doesn't work. The smell stays on despite the hard loamy soap. It reaches into clothes, into the sleeping pallet, and into the walls of the house.

He rinses his hands and comes back into the kitchen.

"Did he buy any fish?"

Li laughs and moves over to help Mei cook, expertly searing the strips of fish she hands him over the bubbling oil. The aroma is sweet with Mei's spices, but still familiar.

"No, I do not think Mr. Pepper likes fish. A British car came and took him away."

Mei swears to herself and chops at the head of the snapper, startling him. Mei doesn't like the British. Her family maintains the distrust, over Taiwan, over the Opium Wars, all history that to Li is many generations buried.

He gives Mei a long hug.

"The British will not hold him long."

"I wonder," she says, "why they took him away? He is a dangerous man."

"Maybe they have something they want from him. Pepper, he knows things."

Li can tell, though, that Mei does not wish to speak about Pepper anymore. So he changes the subject, while testing the fish broth with a wooden spoon.

"It is good, as usual."

"Xie xie."

Li takes a rice bowl and spoons in fish and broth, clicking his chopsticks, a gift from Mei's brother. He always honors Ahn's memory at meals with them.

"More foreigner tourists today," she says through a mouthful of rice. "I got generous tips. A man from Texas. I told him our dream. He was very nice."

"That is good."

Li talks to his wife about weather, and the new docks being built. She tells him about the white tourists she guides around the city of Macau. They record everything on little cameras as she herds them around in little groups like sheep. She does not believe they ever actually see the city, they hide behind the small screen, and icons like "zoom," and "pan left."

Li chuckles. His wife is quick-minded.

After dinner he washes the bowls quickly and follows Mei to their pallet. Even after five years he still finds it amazing that she gave up Beijing for him.

He kisses her, then they lower down to the pallet.

When he pulls out the government condom he can see the sadness in her eyes. He knows she wishes for children, but they cannot afford a child now. Not until they reach America.

"It is all for the better," he says, knowing that the sadness will pass quickly, and that Mei will become her cheerful self after a while.

"I know," she says, pulling him to her. "It doesn't make it any easier."

A TAPPING wakes Li. He blinks the sleep out of his eyes and stumbles through the dark. It is raining, and a dark figure stands at his door.

Li fights a wave of dizziness.

"Hao-Chang." Pepper's voice penetrates Li's befuddlement, and he snaps awake.

"Pepper, I have something for you," Li says quickly. He wonders what the mercenary is doing here.

Pepper's steel eyes blink.

"Qing jiang ying wen," he says slowly, as if unsure of himself. His Cantonese is usually impeccable; now he stumbles over the words as if they are unfamiliar.

"In English," Li nods. "I am sorry. Of course. I have something you dropped, a disk, on the pavement, earlier today."

"He will not die. He is strong, he is built to handle and take these kinds of things." She would know such things. She once studied medicine at Beijing University. "He will probably be here a while," Mei continues.

"What would you have me say?" Li hisses. "No? And refuse him?"

Mei doesn't answer, she stares just past him, disapproving. Li sips his tea and calms himself. She knows that he is making the best of what he can in the situation for both of them.

Li leans forward and kisses her on the forehead.

"I must go to the fish market early," he says. "I am going back to bed."

MEI'S WARM BODY is snuggled alongside him. Li reluctantly pulls away and into the cold morning. Pepper is asleep on the kitchen floor, the blanket Mei gave him discolored with rust-brown stains.

The rain still beats a tattoo against the side of the small apartment.

Li makes tea, sipping it quickly, then pauses to grab two large wicker baskets before he leaves for the docks. There, in the dim light of the morning, he buys his fish from the back of a trawler. An eerie, silent process. Li points with yuan clenched in his fist, then the men shovel fish into his baskets.

He carries the load of fish back to his stall, back straining against the weight.

MEI COMES OVER to the fish stall at lunch with his thermos of fish broth.

"Forgetful," she teases him.

"Always."

She kisses him on the nose. Then she furrows her eyebrows.

"Our 'guest' still sleeps. I washed and changed his blankets. He is feverish now. I think it will break before tonight."

"Can I sell you a fish?" Li asks, holding a large squid out at her. "Very delicious." Mei pushes it away.

Li notices a slight movement, and his ears catch the distant delayed puff of a silenced weapon.

Pepper nods. Li notices that Pepper is in bad shape; blood soaks the shirt underneath the oilskin duster.

"It has a tracker in it. I followed it here."

"I will get it for you." Li turns to go back in for his purse, but Pepper grabs his forearm. Li reflexively tries to pull away, fear spiking as he turns back, realizing the grip is unbreakable. Pepper pulls out a small needle, ignoring Li's wince as he slides the tip under the skin.

"The disk is important, and poisoned, to kill the one that steals from me. You were infected when you touched it. Now you will be safe."

Pepper walks into Li's kitchen and carefully sits down on the bench, just as Mei comes in, wrapping herself in a robe. Li looks down at the tip of his finger, then closes the door.

"Wan shang hao," she says, greeting Pepper.

"Evening," he replies. "I apologize for waking you. I'm hurt very badly, and I don't have anywhere to spend the night."

Mei shoots Li a quick glance of enquiry, what is this dangerous man doing here? Li wonders himself, but he thinks of Pepper's yuan and America, and he nods OK to her. She reluctantly turns her questioning glance to Pepper.

"I will get you a blanket."

Li grabs his purse and hands Pepper the small disk. Pepper pockets it, then takes the blanket Mei offers. Within a minute the gray eyes slide shut, and the man is asleep.

Mei quietly makes a pot of tea, and they sit and look at the massive black man asleep on their floor.

"Is he going to die?" Li wonders, amazed. His voice cracks slightly. Mei shakes her head.

"Bu shi. I do not want your fish, vendor, now go and sell it to some other poor soul."

Mei turns and walks away down the rows of stalls, and Li watches his wife walk with pride. She is a beautiful woman, and he is a lucky man. In America, they will do well, he thinks.

There is fish to be sold, though.

PEPPER'S FACE is much paler than it should be, and covered in a fine sheen of sweat. Li is worried.

"Ni hao ma?" Mei asks him.

"I am fine," Li replies. "But what of him?"

"Pepper is sick. But he is getting better," Mei reassures him. "His body knows what is best for him. The Westerners have things in his body that are cleansing it, and fixing the damage."

Li remembers some of Mei's tales about Western medicine. Tiny machines that he could not see even if placed on a fingertip can run through Pepper's body to find what is wrong, then fix it.

Pepper mumbles through his shivering.

"Jah, ya man. Irie. OK, OK, there it is, a sweet thing, no? English, English."

Most of the rest Li does not understand. It is in English so heavily accented he cannot make it out. It is not English like everyone else speaks. Li thinks he sometimes hears some of this strange accent when Pepper speaks to him at the Wharf, but not much. Pepper must suppress it, he decides.

He takes his bowl of rice and fish and heads over to their pallet to eat it.

After washing, Mei kisses him fiercely, but tonight it is Li who is thoughtful.

"I cannot," he says, "with another man under the same roof." The apartment is small, and he cannot forget the presence of the large mercenary.

PEPPER IS SITTING on the bench in the morning, sipping tea, his jaw a chiseled line of thoughtfulness. Mei makes to batter fish for a breakfast as Li grabs his two wicker baskets, but Pepper holds up a hand.

"You stay here today, Li," he says in that startling voice. "I need you."

Li looks down at his baskets.

"I must sell fish."

Pepper holds out a fistful of yuan. It covers a week of fish selling, and Li looks down at it greedily.

Pepper hands the yuan to Li.

"You need not sell fish today. Buy breakfast for us, something with lots of meat. I need the protein. But not fish." Pepper smiles a perfect set of teeth. "I have an errand for you to run. It is very important." He has the disk Li rescued earlier in his hand.

"What is it you need, Pepper?"

With the thick fold of cash in his hands, under the watchful eye of Mei, Pepper has Li's full attention.

Pepper tells Li to first go straight down past the wharf into town, to David Tsung.

WITH THE WAD of yuan in his pocket Li decides to first detour down a street lined with food stalls.

He stops in front of a small cart on wheels.

"Shi. But I told him I would think about it, I never have promised anything. It is dangerous."

Tsung thoughtfully picks the disk up, then drops it and swears. Li sees Tsung's finger drop a bead of blood, and assumes that Tsung is also now poisoned. Li is having trouble staying calm. His heart is running away from him, and nervous sweat beads his brow. The threat of death through poison is an ancient bargaining chip, Li knows. It is all that Pepper has armed him with. He hopes it is enough to force the old man to do Pepper's will.

But Pepper's words are in his head, walking him through. Li can still feel the pleasurable press of the yuan in his pocket against the side of his leg, and the beef in his stomach, so he speaks up.

"Pepper says not to be alarmed. The infection will take a day to develop. Only Pepper knows the antidote."

Tsung's voice rises in pitch as he continues swearing, but he looks scared.

"Pepper wants a laptop with cellular modem," Li repeats. "And he wants you to make safety copies of this info-disk." As Tsung steps back from the counter Li sees the shotgun strapped to his forearm, and his heart quickens.

I'm going to die, he thinks. The poison isn't enough of a threat. Maybe Tsung is going to kill me. Does he think I carry the antidote with me?

But Tsung beckons for Li to come through into the back with him.

"You Pepper's messenger, eh? How is Pepper. He OK?"

Li nods.

"Good. I'm glad." Li follows Tsung through the door, and they stand in a room filled with computers of all ages in various states of disassembly. Tsung hunts through several drawers before he pulls out a small laptop. "Here, here," he says. Li accepts the small notebook and stands waiting.

"Wok on Wheels" emblazons the side of the cart, in both English and Chinese characters.

Li is not as interested in deciphering the unfamiliar English symbols; the scent of meat frying on oiled metal draws him in. He realizes his mouth is full of saliva. He hands over yuan for a small dish, greedily scooping meat and sauce into his mouth, relishing the taste of meat.

"Xie xie," he says, but the cook has already turned away from him to toss more strips into the wok to sizzle and dance.

Li watches the cook tease ingredients into the mixture for several seconds as he finishes his meal, then tosses the paper dish at a gutter and continues on.

DAVID TSUNG is an old man from Canton. He sells computers. Or at least, Li thinks so, as the windows of the small store show computers in fading old pictures. As Li steps in a bell dings. He closes his eyes to muster courage, and wishes he had never picked up the tiny disk. Despite the promise of Pepper's yuan, Li is scared.

"What do you want?" A sharp voice from behind the counter.

"Ni hao. I am here to buy a laptop, and a cellular modem."

David Tsung looks Li up and down slowly, squinting eyes scrutinizing the shabby clothes, dirty hands. The smell of fish has entered the store with Li. Li self-consciously rubs his hands against his trousers to try cleaning them.

Tsung abruptly cackles laughter.

"You have won the lottery, then?"

Li shakes his head.

"What money do you have?" Tsung asks. Li pulls the black info-disk out and sets it on the counter in front of Tsung.

"Pepper says you should know what to do with this."

David Tsung jumps slightly at the mention of the name Pepper.

Tsung plugs the disk into another computer. He fiddles around with something on a screen, then smacks his lips as the drive begins whirring.

"I will make copies."

Li nods. Even if Tsung weren't, how would he know otherwise? So he stands and waits for the old man to finish and hand him the original plus a copy.

"The antidote?" Tsung asked.

"Pepper says it is in the mail for you. It will arrive in time."

The little old tech-man seems to deflate even further into himself. He holds up another disk in his clawed hands.

"You tell Pepper I have copies. I will send them out if I don't get an antidote. You understand. Tell him."

Li nods.

"You make sure you tell him to send me antidote."

ON HIS WAY BACK Li stops at "Wok on Wheels" and orders several dishes of Iron Plate Beef. Rice will be waiting at home. The cook remembers him and smiles as he hands Li the covered paper dishes all in a bag with the logo emblazoned on the side.

He splashes through the early morning with a faint smile. The sweet aroma of stir-fried beef mixed with kuomo mushrooms and bamboo shoots reaches his nose.

"WO AI NI," Mei says the second he steps through the door. She hugs him fiercely, and he kisses her back.

"I love you too."

Pepper waits for the exchange to finish before he steps forward.

"Did you get everything?"

Li unshoulders the strap of the laptop case and hands it over. Pepper unzips it and sets in on the small table in the corner.

"I bet Tsung was pissed."

Li nods.

"He swore much." He catches Mei's glance out of the corner of his eye. She is looking at the bag in his hand. He gives it to her.

Mei breezes out of the kitchen with a paper dish into their sleeping room. Li knows she doesn't want to be seen greedily bolting the food down. He respects that. He can still taste the aroma on the edge of his tongue. He desires more. Instead he crosses his legs and sits with Pepper.

Pepper's bulk dwarfs him.

"You risked my life for this, what is it?" Li asks.

Pepper looks up at him and makes a sucking sound with his teeth.

"Man," he says in English, "you risked your own life for the money I gave you." He smiles perfect white teeth again. "But I shouldn't be hard on you. Na." Li notices the strange lilt still in Pepper's English. "It is a great secret."

"Some secrets are better kept secret."

"Not this one." Pepper boots up the small laptop, and it makes squealing noises as it dials into an invisible network. "This secret is exactly the kind that shouldn't be kept."

"Tell me."

"You read much, Li? Do you read the newspapers you wrap your fish in?" Pepper looks up and around. "A few months ago satellites around the world received a message from somewhere outside the solar system. Then it stopped. No one could decipher it, it didn't make any sense, but it was definitely artificial." Pepper's yellowed nails are dancing across the small keyboard.

Li waits as he plugs the disk into the laptop.

"Of course, everyone is curious. What sent it? Will there be more messages? That's what I am here for. My superiors tell me to keep my eyes open and ears to the ground." The English adage is unfamiliar to Li, but he guesses the meaning.

"You found things."

"Observatories on each major landmass across the world are receiving similar messages now." Pepper shifts on the seat and reaches for a dish of beef. He keeps talking through a full mouth. "North and South America, Africa, Europe, Australia ... but Chinese officials denied they had any message. It took two weeks to find this damn version of the message, I got it through a scientist working at a deep-space observatory in Canton. And the message he received is different from all the others. The Chinese clocks show that this message is received first, and only in China. And the intervals in between the message are getting smaller. The other signals are merely repetitions to make sure the rest of the world is blanketed."

"I don't understand."

"Hao-Chang. Whatever it is, it will come here."

Pepper unplugs the case and slips it deep into the folds of his duster.

"Now, everyone in the Western Hemisphere has a copy of the Chinese message. Everyone is in on the great secret! The modem is quiet, the screen asks if the user would like to send another message. And there it is. For what it's worth. Now maybe foreigners will quit harassing me."

Mei comes back into the room, discreetly wiping at her chin. Li unconsciously moves closer to her.

Before he reaches her there is a polite knock on the door.

LI KNOWS THAT he has no neighbors here, and he knows Mei has no family anywhere near the wharf. The fact trickles down through his mind with a cold shiver. Pepper looks up from the paper dish and puts it to his side.

He reaches deep into the duster.

The knock comes again.

Only this time the door is flung aside and a dim figure is in the room. Pepper rolls and fires something loud through his duster. Instinctively Li closes his eyes against the noise. He drops to the ground and stays still.

He hears more clatter, the sounds ringing his ears. His heart thumps loud, and he prays for life.

Mei gasps and falls near him. As Li looks down at his hands he sees blood. Pepper and the assailant are gone, chasing each other through the maze of small huts and apartments.

"Mei," he whispers. The only response is a short gasp, Li can hardly hear it. He gets to his knees and bends over his wife.

"Mei."

He sees her reaching for air, but not getting any. Instead of exhaling she coughs up blood. It runs down her cheek and into the dirt floor. Li cannot find words; he starts to gather her up in his arms, but she coughs again, the action racking her small body. He holds her there, in his arms, just above the dirt floor.

Her eyes are glazed, wandering around the room unfocused. Li puts his face before her. For a brief second her eyes seem to focus on him, then they are looking past him, and he can no longer feel the slight flutter of her heart.

"Mei."

Li allows her body to gently slip back onto the dirt floor. He weeps, his tears mixing with the stale rainwater dripping in through the bullet holes in the roof.

Li sees Tsung's finger drop a bead of blood, and assumes that Tsung in also now poisoned.

He barely notices the gun battle outside cease, or Pepper silently returning. Pepper stands at the door for a minute, then carefully crawls into a corner.

Li stays kneeled over the body of his wife for several hours.

PEPPER SHAKES LI'S SHOULDER early in the morning. Pepper is pale, and the duster is once more soaked in blood. But he moves with quiet confidence.

"I am sorry about your wife," he says. "She was a good woman."

Li looks at the man uncomprehendingly.

"Good woman? Of course she good woman," he yells in broken English, tears flowing. "What know you of sorrow son of bitch?" He screams. He wants to attack Pepper for cursing him so. He wants to see Pepper dead on the floor with his wife. He wants his wife back. He wants what has been ripped from him. And he is drowning in an empty void.

"My superiors have what they want," Pepper continues haltingly. "I have to leave and go home." He opens his duster to expose chewed-up skin. Underneath his flat stomach the glint of metal flashes. "I was given orders to leave as soon as possible."

Li squints his eyes against the early morning light streaming in through the half-open door.

"Go home. Never come back."

He turns back away and shivers as a draft of cold air passes through the room.

"I just wanted to apologize ... and give you this." Pepper steps forward and hands Li another thick wad of bills. It is enough to go to America. It is enough for Li to do anything. Li throws the money back at Pepper.

Continued on page 79

GIVE ME THAT OLD-FASHIONED FUTURE

Paul Youll's nostalgia for the future helps keep a sense of wonder alive.

"THE PROBLEM WITH Science Fiction," says artist Paul Youll, "is we're closing toward the 21st century, and all the futuristic stuff's been done. It's been seen. Science Fiction should be a shock, a revolution, not some warm, cozy, familiar image. A spaceship should look like an amazing vehicle, not like a damned telephone with some lights stuck on it!"

Youll is nostalgic for the way the future once looked, for that shock of the new. "I must admit that I do love Science Fiction art, especially big, detailed spaceships. I wish there was more of it around. I miss the big spaceships. And kids think they're cool."

The artist got a chance to indulge his love of rocketships recently when he painted covers for 10 *Star Wars* X-Wing novels. "I made each one look like a scene from a movie, built the models, painted and lit them exactly. I was

BY KAREN HABER

He's not afraid of darkness, keeping his colors rich to compensate for the dark blues and burgundies of deep space.

trying to bring that old-fashioned Science Fiction feel, that sense of wonder, with a fresh twist."

Despite his training in naturalistic art at Durham New College of Art and Design and the Sunderland University—where Youll would wander the halls looking poisoned after sucking on his paintbrushes—he loves to depict space hardware. His paintings contain the romance of all good Science Fiction art. In them, fabulous cities glow under mysterious stars and spaceships lift off for mind-boggling destinations.

His spaceships are especially impressive, combining organic formalism with high-tech details that make them unique and surprising. Youll spins the color wheel for powerful color effects utilizing analogous combinations and triadic harmonies. He's not afraid of darkness, keeping his colors rich to compensate for the dark blues and burgundies of deep space. Blood-red nebulae pulse across his heavens.

And don't overlook the details. Keep an eye on the corners, foregrounds, and backgrounds of his paintings, for that's where the artist indulges his love of naturalistic detail, providing glimpses of strange landscapes and flora.

"I really enjoyed doing the Ian Banks series, *Consider Phlebus* and *Excession*. I thrive on Science Fiction. It's ironic, really, because it's the opposite of what I studied. But realism helps even in Science Fiction."

Although he's painted for major U.S. and U.K. publishers, he says that at times he feels like the invisible Youll. "I don't think that, at first, people knew there were two of us."

In case you don't know, Paul launched his artistic career in tandem with his twin brother, Stephen, at the Brighton World Science Fiction Convention in 1987. Discovered there by U.S. publishers, the Youll brothers were soon churning out covers for Bantam. But the brother act broke up when Stephen moved to the United States a year later.

When asked which one of them is the evil twin, Paul replies without hesitation, "Stephen. He's much fierier than I am. Maybe it's because he lives near New York City and I live in the English countryside."

Despite years of artistic separation, the twins can fall right back into what Paul calls "the Youll routine." He recalls coming into his brother Stephen's studio, sleepless from an all-night transatlantic flight and, despite jet-lag, picking up a paintbrush and falling to when Stephen asked for help on a canvas.

And while Stephen may be the evil twin, Paul is definitely the unsentimental one. What, for him, was the major effect of the separation from his brother? "I got to keep the entire paycheck instead of splitting it." Which is not to say that he doesn't miss Stephen: The twins speak on a daily basis.

PREVIOUS SPREAD: Icarus Hunt *shows a nontraditional glimpse of a traditional SF object, the spaceship. PREVIOUS SPREAD INSET:* The Orpheus Machine *depicts a city of the future. CENTER ABOVE: The battle rages in* Star Wars: Iron Fist. *UPPER RIGHT:* Star Wars: Wraith Squadron *speeds across a dead planet.. LOWER RIGHT: The idyllic landscape of* Freedom's Challenge.

ABOVE: An alien world gleams in the sun in Gods of Green Mountain . *CENTER:* The Multiplex Man *depicts the city that tomorrow promised us. OPPOSITE ABOVE: A gritty future is depicted in* The Host. *OPPOSITE BELOW: Paul Youll can depict the people of the future as well as objects of the future.*

"People think because I live in the English countryside, I'm out of touch. But the art world is a microcosm. I always know what's going on."

Youll is also clear-eyed about artistic ability: He feels that either you have it or you don't. "It can't be taught. Either you can draw and paint or you can't. Same thing with Science Fiction. You either get it or you don't. It's innate ... can't be forced.

"Science Fiction has always been cool. It's just people who aren't. If you don't get it, if you don't like it, fine. But don't say you like it just because it's a trend. If you want to go into it, make damn certain you love SF. If you don't like it, you'll never get it, and you'll never be good at it."

Despite his natural artistic ability and love of SF, Youll never considered becoming a professional Science Fiction illustrator until he graduated from high school.

"When we were kids, Stephen and I used to draw Science Fiction scenes all the time. But it was a hobby. It didn't occur to me to become a professional artist until the last day at school. I guess it was the art teacher who guided us in the right direction, maybe the only useful thing he ever said."

Unsurprisingly, Youll doesn't have a very high opinion of art education. "There are so few good teachers. I feel self-taught about art. All college is is a place to go and practice. If you're going to make mistakes, make them there. The field is very unforgiving."

He also doesn't think much of computer digitalization. In fact, he considers it downright harmful to an artist's eye-hand skills.

"Digital is already looking dated. Maybe that's because everybody uses the same programs, with the same creative limitations. When you want to do something that's really cool, the computer has so many restrictions. Not like your good old hands.

"I'm a very traditional artist. I'll work in any medium. I've dabbled with the computer, but I think that working on a computer has a psychological effect. It's hard to come back from it to hand skills. Which doesn't mean that I don't admire the work of several artists using the computer. It's just not for me."

He often uses oil over acrylic, with a drying agent mixed into the oils. How long can a painting take from start to finish? "It depends on how you do 'em. Sometimes it can take as long to paint one spaceship as paint six figures on horseback with a fabulous background. It usually takes me a week and a half to two weeks to complete a cover. It's difficult to gauge—depends what I've got [to do]. I love just working on one piece at a time, but right now I've got three going."

Youll can move easily between jobs. "You've got to do something while the paint dries on one painting." He believes that the best artists rely on their imagination rather than pictorial references. "The best artists are those who can work out of their heads. Your imagination is probably the most invaluable thing that you have. That, and a good art director. If you only rely on references—and something happens and you can't find them—you're screwed."

His love of SF makes Youll protective of the books he's assigned to illustrate. "These days, the majority of editors who govern Science Fiction didn't come to it out of love and understanding, out of enthusiasm. They get put into a job to do one thing and then they're given SF to do, and they never really appreciate it or understand what should go on the cover.

"The art directors are all good but the problem is that everyone is overworked. They're so busy. I've been in an art director's office and watched what was going on and thought, 'God, I'd hate to do this job.'

"It's easy to lose sight of what's important: the sense of wonder. That's why it's up to the artist to read the manuscript and come up with suggestions—everybody else is just too busy to protect the book."

Youll combines his love of film with his sense of mission. "When I'm composing a work, I always try to think of it as a scene in a movie. After all, celluloid is the greatest art form of this century. So I ask myself, 'What would this look like in a movie?'"

To maintain the cinematic mood, Youll likes to listen to movie tapes as he works. "If you're doing a Science Fiction cover, you can surround yourself with Science Fictional sounds and music. If there isn't any background noise for me, it's like a deadness in the air. I need something to engage my brain in different areas, to keep me from concentrating too heavily and getting in my own way."

Compositionally, Youll subscribes to the theory that less is more. "The simple image makes people think about other things—it evokes other things, activates the viewer's imagination. When in doubt, it's always better to leave something out of a painting." □

If you are what you eat, does it also

follow that you eat what you are?

I had reserved the table at Trimalchio's way back in January, three months in advance. It was Tamara's birthday treat, and I figured that it would also be the perfect occasion to ask her to marry me. I wanted the circumstances to be as favorable as possible to maximize my chances of success. Rumor has it that a lot of celebrities were clamoring to get in, not because they had any inkling of what was about to happen but simply because it was Saturday night—and ever since Jerome had joined the hallowed ranks of superstar chefs, Trimalchio's was *the* place to be seen—but Jerome wasn't the kind of man to start canceling reservations in order to accommodate TV personalities. He was a man of honor.

We had to run the gauntlet when we arrived, of course, but we weren't in the least frightened. We didn't feel that we were in any real danger from the anti-GM brigade who were baying for Jerome's blood. They were very noisy, of course—their cause had been on the skids for years, and the hardcore had responded by becoming even more fanatical and dogmatic—but they knew from bitter experience that attacking customers qualified as an instant PR disaster. The only ones in physical danger were members of the increasingly vociferous counter demonstration: Jerome's most ardent fans. For every banner proclaiming that he was a "Frankenstein Chef" or a "Kitchen Devil," there was one proclaiming him to be the messiah of the new gastronomy. There were even a few innocently hyperbolic placards carrying forward a grand old south London tradition that went way back to the 1960s and the first rock superstars, which simply said: JEROME IS GOD.

The Last Supper

By Brian Stableford

Illustration by Chris Mars

I found the sprint from the taxi quite exhilarating, although Tamara was a little bit annoyed that none of the paparazzi bothered to aim a flashbulb in our direction. I assured her that she looked as good as any of the models who were distracting their attention, and apologized for the fact that mere riches didn't make me as newsworthy as the sons of hereditary peers. She did look wonderful. Her peacock-blue evening dress and pastel hosiery were smart in the old sense as well as the new: a perfect refutation of the fashion-dinosaur argument that no matter how useful and hygienic they might be, active fibers would never look as good as ancient silks and velvets.

We didn't get the best table, of course. I suppose anyone who was there to be seen would have reckoned it the worst, and there was a distinct frown on Tamara's face as we were shown to it, but it suited my purposes very well. I wanted to be in a quiet corner, where Tamara and I would have eyes only for one another.

We didn't have to worry about being unable to catch the waiter's eye—the staff at Trimalchio's were the best in London and it wasn't as if we had any choices to make. Jerome's clients were expected to eat and drink exactly what he provided and be grateful, and that was fine by us.

When she had first read about him in the Style section of the *Sunday Times*, Tamara had been as fervent in her support of Jerome's insistence on a set menu as she was of his determination to experiment with the best Genetically Modified foodstuffs that the world had to offer. "The man is a great artist," she had assured me, way back on New Year's Eve, in the course of what was then a purely hypothetical discussion. "He plans a meal as a perfect *ensemble*. He leaves pick-and-mix to the sweetie counter in Woolworth's, where it belongs. I was at uni with one of the geneticists he works with, and the firm has regular dealings with his suppliers. A lot of the GM chefs are content to use modern substitutes for the ingredients in traditional recipes, but Jerome's a genuine inventor. He's right at the cutting edge of food science, and that puts him at the cutting edge of biotech itself. There'd be no point in offering his customers a choice of dishes because he uses so many ingredients that none of his clients—even his regulars—have ever had the opportunity of tasting. Even if they've encountered the raw materials, they can't possibly have the slightest idea what a master chef can do with them."

"I'm not sure I like the sound of that," I'd said at the time. "Individual tastes do differ—one man's meat and all that."

"Don't be silly, Ben," she'd said. "Faddy eating is the sign of a bad upbringing. Your petty prejudices are quite irrational. They have nothing to do with matters of *individual taste*."

I loved her very dearly. It would only have spoiled our mood to press the point that, however irrational it might be, there were certain foods I simply hated, especially anchovies and escargots, and certain others to which I strongly suspected that I might be allergic—including mussels and locusts, no matter what modifications had been made to their genomes.

"A great chef is a great artist," Tamara had added. "His customers have to have faith in him. He has every right to demand that they trust his judgment."

"I guess you're right," I had admitted, as the seeds of my plan had taken root. As we took our seats and the waiter handed Tamara a card headed SUPPER: DIRECTORY OF COURSES, I crossed my fingers, hoping that if anything turned up that I didn't like I would either be able to stomach it in spite of my inclinations or dispose of it surreptitiously. The one thing I couldn't do, of course, was leave it on the plate. Newspaper reports alleged that Jerome was wont to emerge from his kitchen wielding a heavy ladle in response to that kind of insult. I could certainly expect a negative answer to my proposal if we were asked to leave in mid-meal—and the bored paparazzi inevitably took a great and exceedingly unflattering interest in anyone coming out of Trimalchio's in advance of the sated and spiritually uplifted crowd.

OUR TABLE WAS LIT BY TWO CANDLES—MOLDED IN GM TALLOW, OF course—and decorated by a discreet bouquet of flowers set in a tiny vase. I couldn't put a name to the flowers, but that was hardly surprising. Jerome only used originals. It was entirely possible that there was at least one species in the array that had only existed for a matter of weeks and would become extinct that very night.

The aperitif was as clear and colorless as water, but its texture suggested that it was a complex organic cocktail. When I remarked that I found it refreshing but oddly tasteless, Tamara explained that that was the whole point. It was intended to restore the "virginity of the tongue" by clearing away the lingering legacy of past experience.

The *hors d'oeuvres* were served in little silver dishes mounted on the heads of rampant chimeras formed from some kind of acrylic plastic. The workmanship was exceptionally fine; you could almost see the individual scales in the chimera's hind-parts. I didn't bother to point this out to Tamara in case she took it as another example of what she called "nanotechnologist's disease." "The trouble with you, Ben," she had said during the big row we had had after Christmas, "is that you're obsessed with tiny things. With you, it's not just a matter of not being able to see the forest for the trees—it's a matter of not being able to see the forest for the cracks in the bark of a fallen twig." For much the same reason, I didn't bother to point out the marvelous intricacy of the patterns engraved in black and white on the skins of the olives. Tamara made up for my reticence by waxing lyrical about the technical difficulties that Jerome's geneticists had had to overcome in order to ensure that the honeyed poppy-seeds used to season the roast dormice could be grown in situ, within the flesh of the living animal.

The dormice were a trifle too sweet for my taste and the olives too oily, but I did like the little toroidal sausages—although I might have liked them even better if they hadn't been wrapped around black figs. Tamara loved all of it, to the extent that she ate at least twice as much as me. I didn't mind. It was her treat, and it's not every day that a woman reaches her 25th birthday *and* receives her fourth proposal of marriage. I had wondered whether it was worth quipping that it was a lot better than receiving her 25th proposal on her fourth birthday, but I'd abandoned the plan because she would only have looked at me as if I were mad. "It's a joke," I would have said, the way I always did. "Is it?" she would have replied, implying that if there were such a thing as a joking test I would probably have failed it nearly as often as I'd failed my driving test.

The possibility of being out-eaten didn't arise again, of course, because the other courses were served in carefully measured individual portions on separate plates. The possibility of being out-drank remained—the decanters containing the first white wine were brought out in advance of the second course—but Tamara was sufficiently old-fashioned to think that it was a gentleman's duty to pour, so I was confident that I could share it out with as much exactitude as my slightly unsteady hand could contrive. I was so nervous that I would have liked an extra glass to settle me down, but I also wanted to make sure that Tamara was as mellow as possible by the time the big moment arrived, so scrupulous evenhandedness seemed politic as well as polite.

"Happy, darling?" I asked, as we paused with our glasses to savor the bouquet of the wine.

"Ecstatic," she assured me. She closed her eyes for a while, saying: "I'm trying to make the most of the pleasures of anticipation, so that they'll be redoubled by those of satiation."

"Me too," I assured her, although I was thinking about the ring in my pocket rather than the food.

The second course was what I'd normally have thought of as a starter, although the *hors d'oeuvres* had been far too substantial to qualify as a mere tease. It looked like an unusually coherent terrine, but there was no trace of token green stuff except for a light sprinkle of chopped herbs. The central blob was surrounded by a ring of eggs smaller than a quail's and the whole thing was bedded on what looked like unleavened bread.

According to the directory, the blob was compounded from the "vulva" and "sumen" of a virgin sow—some kind of fancy pork, I deduced. The herbal seasoning was allegedly *laserpitium*, although

a dutiful footnote pointed out that because no one now knew what plant the laserpitium of the ancients had been, the name had been considered free for application to an entirely new herb devised by Jerome's geneticists.

All in all, it didn't taste too bad. I wouldn't go so far as to say that I liked it, but it was on the sunny side of tolerable.

"Brilliant," Tamara said, as she finished. "Magical, even. I thought it would just be the taste, but it isn't, is it? You can actually feel the food settling into your stomach, can't you? It's as if this is what our alimentary systems have been crying out for ever since the first cooking fires were lit."

Tamara had strong feelings about the folly of the anti-GM brigade. "Everything we now think of as human nature is the product of the primal biotechnologies," she was fond of saying. "Anyone who thinks that biotechnology is an offense against nature is delusional as well as stupid." The *primal biotechnologies*, in the jargon of her trade, were cooking and clothing. Both innovations, in Tamara's firmly held but not-quite-conventional view, had been introduced by women; according to her, the entire panoply of "masculine hardware"—including all the stone, ceramic, and metal tools in whose evolution old-fashioned male archaeologists were wont to trace the progress of preliterate societies—had been nothing more than a series of technical tricks developed to serve the imperatives of the primal biotechnologies.

Tamara further contended—and how could a mere technical trickster like me disagree with an ace biotechnologist?—that the entire history of civilization had followed the same pattern. Everything men had ever made or done had been devised to serve the insatiable demands of the "feminine imperative"—a valiant but inadequate tribute to the twin maternal devices that had broken nature's cruel yoke and set humankind on the road of intellect and artistry. My colleague and ex-friend Steve Semple had once opined that that was exactly the kind of thing a mad domineering bitch might be expected to say to a lovesick puppy, but he was just jealous.

I had once—and only once—made the mistake of pointing out to Tamara that in the modern world the "primal biotechnologies" seemed to have been hijacked by men, who still supplied the great majority of the 21st century's finest chefs and couturiers in spite of the victories of late 20th-century feminism. "The greatest ambition of the male of the species has always been to cultivate as much effeminacy as testosterone will permit," she informed me. "How many great chefs and couturiers are straight, do you think? The trouble is that those unlucky souls who can't measure up to mature standards of effeminacy tend to express their defensive masculinity in a frank refusal to learn to cook or dress themselves properly."

There was none of that at Trimalchio's, of course. By that time I knew exactly which topics of conversation were safe and comfortable, and I was able to steer the chat in all the right directions. Tamara was happy that night, and when she was happy she was breathtakingly beautiful. People like Steve were incapable of understanding a woman like her, and resentment transformed their lust into hostility. I, on the other hand, loved her as honestly and as absolutely as anyone could. If she were ever going to marry anyone, I thought as I gulped my first mouthful of the red wine, it would definitely be me—and for all her affectations of independence, she needed love and stability just as much as anyone else.

Ever since I had first glanced at Jerome's directory of courses, I had known that the third would be the most substantial challenge to my constitution. There is not a dessert in the world that can intimidate me, but when it comes to entrées I candidly admit that I am what Tamara likes to call "a Stone Age meat-and-two-veg-man." I love the roast beef, potatoes, and carrots my mother used to make, with or without the Yorkshire pudding, and I see no need to apologize for the fact.

I had been hoping all week that I might strike it lucky and catch Jerome in a traditional mood, taking what comfort I could from the knowledge that my wishes were likely to be at least partially granted. Jerome was well known as a great fan of the potato. He'd been waxing lyrical on its virtues for 10 years, and had presumably been doing so even before he got heavily into GM cuisine. The so-called "degradation of the potato" had always been the favorite object of his particular version of that fiery anger which is every great chef's prerogative and duty. When Columbus first reached the Americas, he told the world, there were six hundred different species of potato distributed from the heights of the Andes to the plains of Patagonia, and all but a handful had been driven to extinction by chip-addicted dullards. One of the key projects he had set his scientific collaborators was to recover and then to surpass the natural variability of the potato—so it's hardly surprising that the main course on that epoch-making evening was accompanied by no less than three different kinds of potato, one served mashed, one boiled, and one sautéed.

"Did you see that item on last night's Sky News about the chef who was shot?"

Having been granted that, how could I then complain about the fact that they were accompanying tentacles of young giant squid stuffed with mutton brains?

I found, once I'd steeled myself to try it, that the flesh of young giant squid wasn't nearly as rubbery as the kind of calamari my mother used to foist on me when she wasn't in a roast beef mood. The engineers modifying squid species were still engaged in a headlong dash to produce the biggest living organism ever, so the culinary possibilities of the species had been virtually relegated to the economically important but crudely utilitarian realms of pet food production. Jerome was one of the first people to figure out that the tender meat of very young individuals had possibilities undreamed of by geneticists fixated on issues of size, and I had to admit that he had a point.

As it turned out, I had slightly more difficulty with the stuffing. My maternal grandmother had an aunt who'd died of the same strain of CJD that was implicated in the infamous beef ban of the 1990s and Gran was always insistent—in spite of all the scientific evidence that later came to light proving that the cattle had caught it from us, not the other way around—that it had been scrapie-infected sheep that had been the source of the trouble. According to her, mutton brains were just about the most dangerous foodstuff in the world. "No good will come of it!" she'd cried, when the proven effectiveness of GM-mutton brains as an intelligence-enhancer in infants had delivered the first effective left hook to the jutting chin of anti-GM prejudice. Alas, her protests hadn't prevented Mum from feeding it to me throughout my teens, as if quantity might somehow make up for the fact that she'd missed the window of real opportunity by a good 10 years.

At the end of the day, though, the stuffing was something I could eat, and I tucked the lot away without bothering to inquire too carefully as to the contents of the sauce, which were conveniently disguised by esoteric French and Latin in the directory. When I washed the last mouthful down with the last of the red wine, I felt positively triumphant—as if my success in dealing with the food were an infallible omen of success in the evening's greater enterprise.

"Wasn't that simply extraordinary?" I said to Tamara.

"Marvelous," she confirmed.

"I suppose we ought to feel slightly guilty about snatching good mutton brain out of the mouths of the tinies who derive such benefit from it," I said, "but I can't. I can feel it doing me good, even though I'm way too old."

"You're right," she said. It wasn't a phrase that passed her lovely lips very often, so I was delighted to hear it. "The wine sets it off perfectly, don't you think? To think that our parents used to value wine for its age! Do you think there'll ever come a time again when this year's vintage isn't the finest ever?"

"My Mum and Dad used to drink that *Beaujolais nouveau* stuff," I remembered.

"Vile red ink!" she retorted. "It might have helped in some small way to pioneer the change of attitude necessary to introduce GM wine, but no true connoisseur would have touched it. *This* is entirely different. Entirely!"

"Oh, absolutely," I said, as the third decanter was deposited in the middle of the table. "Who knew what true intoxication was in those days? Who understood the real subtleties of psychotropic artistry?"

"We owe Jerome and his disciples a tremendous debt," she confirmed. "When I think about those demonstrators outside—the antis, I mean, not his supporters—it makes me want to cry. They're dogmatists of the worst stripe, incapable of seeing sense—the stuff of which witch-hunters and inquisitors are made. Did you see that item on last night's Sky News about the chef in New York who was shot?"

"Yes, I did," I confirmed. "Yet another martyr to the cause of progress. There's always a mindless mob, isn't there? It's as if the lunatics just moved two doors down the road on the day the last abortion clinic closed. It's not as if there isn't an effective system of monitoring and control, is it?"

That was a slight mistake. I should have known better than to use the word "effective."

"Well, yes it is, actually," Tamara snapped. "We got saddled with far, far too many bad laws in the first decade of the new millennium, and far too many of them are still on the statute book. There's too much insistence on formulaic testing. That obsolete monitoring system has become a millstone around the neck of the nation's scientists—bioscientists, I mean. You specialists in inorganic nanotech don't know how lucky you are not to have to deal with all that shit."

Mercifully, the arrival of the dessert cut the lecture short.

I had been looking forward to what I still insisted, if only privately, of thinking of as "pudding." The dessert on offer on that fateful night at Trimalchio's was one of those ingenious dishes that take advantage of the fact that ice crystals are poor absorbers of microwave radiation and poor conductors of heat. This allows ingenious ice-cream sculptures to contain nested compotes of fruit heated to a temperature that can easily burn the mouth of an unwary diner. Needless to say, there were no such fools present at Trimalchio's that evening. We all knew that the art of eating such concoctions was all in the timing. Even Tamara knew how to manage the various components of the dessert as she dissected its complex architecture, savoring its gradual dissolution as well as its medley of tastes.

It is, I suppose, one of the great ironies of GM cuisine that it remains subject to the basic elements of the sense of taste. Although the gastronomic employment of saltiness and bitterness has always been relatively subtle, there is a certain inevitable crudity about sweetness. The only natural substance on which genetic engineers have not yet managed to improve is sucrose, and there is thus a sense in which the dessert is the most "primitive" part of any modern meal. In my personal opinion, however, the miracles that the engineers have wrought in cultured animal flesh are outweighed by those applied to soft fruits. I would gladly have swallowed a few garlic-laden snails or risked the effects of a few deep-fried locusts in order to have the privilege of having Jerome's raspberries and blueberries melt on my tongue.

The dessert wine was equally fine. Even Tamara said so, although if it had been something I'd brought home from the hypermarket the merest glance would have been enough to convince her that it was too syrupy. It's slightly absurd, now that slimness is a straightforward matter of somatic management, that so many willowy women still profess to dislike the taste of sugar, but in Tamara's case the idiosyncrasy was authentic. She was never one to follow fashion blindly.

"The perfect end to a perfect meal," was Tamara's judgment, as she laid her spoon aside for the final time.

"The evening's not over yet," I told her—but she seemed to have no suspicion of my intended meaning. She might even have made some remark about not having forgotten the coffee had it not been for the fact that Jerome chose that moment to make his entrance into the dining room.

I had no inkling at first that anything was wrong. Reports I had read in the newspapers had said that the great man often came into the dining room when his own work was concluded, in order to receive the grateful thanks of his clients. Routine or not, though, every eye in the place was upon him from the moment he stepped into view. When he raised his arms slightly to ask for silence, all conversation was instantly hushed.

"My friends," he said, in a tone whose evenness can only have been maintained with the utmost effort and dignity, "I fear that I have some bad news for you. It seems that Trimalchio's will be closing its doors tonight, never to reopen."

This statement was greeted with a collective gasp of astonished horror, but no one said a word. We simply waited for Jerome to continue.

"I have been informed that officers from New Scotland Yard are on their way to arrest me even as we speak," he told us. "It seems that a man I trusted—a *sous-chef* who has long been one of my most trusted confidants—has provided the police with an extensive dossier on my recent activities, including an itemized list of ingredients that I have used in my kitchens despite their lack of a certification of safety from the Ministry of Food Technology. I must confess that I have never made more than tenuous efforts to conceal the fact that I have used technically illicit materials whenever I felt that my recipes required them. Those of you who know my methods well will know that I have never served anything to my customers—my guests, as I have always thought of them—whose effects I have not tested to the full on my own digestive system. I am, and always will be, perfectly confident that my judgment of a foodstuff's value and safety is worth infinitely more than any MFT certificate, but the fact remains that I have broken the law and that the evidence my former disciple has given to New Scotland Yard will ensure that I am held to account for my transgressions."

A few cries of "Shame!" were heard at this point, but Jerome raised his hand again to silence them.

"It is, of course, highly unlikely that I shall be required to serve a prison sentence," he continued, "and I have more than enough money to pay any reasonable fine, but you will all understand that the matter of my punishment is not so simple. The law, as it now stands, will require that I be banned for life from owning or working in a restaurant, or from any significant involvement in commercial catering. In short, ladies and gentleman, the result of my inevitable conviction will be a virtual death sentence. This body will continue to live, but its soul and vocation will be extinguished. After tonight, Jerome will be no more. The meal you have just eaten is the last masterpiece I shall ever create.

"In a few minutes I will pass among you, as has often been my pleasure, to shake you all by the hand and thank you for coming here tonight. I know that each and every one of you, whether you are numbered among my dearest friends and most loyal customers or whether you are visiting Trimalchio's for the very first time, will be as sorry to hear this news as I am, but I beg you to be brave, and not to make a sad occasion sadder by weeping. I would like to be able to treasure the memory of these last few moments of my life as Jerome, and I hope that you can help me to do that. I hope, too, that you will take away memories of your own that you will always treasure; we are, after all, true collaborators in the great enterprise—may I say

the great *crusade*?—that has been Trimalchio's. If you will indulge me, I should like to say a few final words about my mission before the police arrive."

Indulge him! His audience was rapt, hungry for every word.

"No one here will be surprised to hear me say that the Promethean fire which first raised humanity above the animal was the *cooking* fire," Jerome went on. "The seed of Godhood was sown within humankind on the day it was first decided that the raw, bloody, and meager providence of nature was inadequate to the needs of a creature possessed of mind—and hence of taste. No one here will be astonished to hear me quote with unqualified approval the old saw that we are what we eat. When the first agriculturalists and herdsmen set out to modify the genomes of other species by selective breeding, for culinary convenience, they also began the modification of their own flesh by the alteration of their own selective regime. When I say that we are what we eat, I do not simply mean that the flesh of our captive plants and animals has become our flesh, but that we have internalized the consequences of our own biotechnologies. Our first human ancestors placed themselves in the slow oven that we call society, carefully dressed themselves with the seasoning that we call culture, and set their sights firmly upon that perfect combination of manufactured tastes that we call civilization.

"You and I are fortunate, my friends, to have lived in interesting times—not because we have witnessed the imbecilic wars and witch-hunts whose casualty lists I am about to join, but because we have been present at the dawn of a new era in human nutrition: the era of nutritive augmentation. Just as the clothes we wear nowadays are active assistants in the business of waste management, patiently absorbing all the organic byproducts of which the body must be rid, so the food we shall eat in future will be active within our bodies. The foodstuffs of tomorrow will not simply be broken down into the elementary building blocks of our resident metabolism; they will work within us in far more ambitious ways, to equip our flesh with new fortitude and new versatility. I have tried, in my own humble way, to make some beginnings of this kind. I promise you, my friends, that you will be better off for the meal you have eaten this evening in more ways than you had anticipated. Even before I learned that it would be my last I had determined to excel myself, and when I learned of my betrayal, I increased my efforts. The effects will, I fear, be subtle, but I hope that they will be detectable long after the constituents of any ordinary meal would have been thoroughly digested, excreted, and evacuated. I hope that they will help you to remember me, and to remember me kindly. Thank you all—and farewell."

He made his tour of the room then. There must have been camcorders in the building, and I dare say that three out of every five diners probably had digital cameras secreted somewhere about their persons, but no one attempted to take pictures. It was an essentially private and personal occasion. To make a record of it would have been too closely akin to admitting the loathsome paparazzi.

When Jerome came to take my hand in his I knew that fate had already spoiled my grand plan—how could I possibly propose to Tamara now?—but I also knew that he was not at all to blame. I tried my utmost to keep the tears from my eyes as I gripped his fingers and thanked him profusely for everything that he had done for me and for the world, but I'm not sure that I succeeded.

Tamara certainly didn't: Had it not been for her smart foundation her cheeks would have been streaming when she whispered: "Maestro!" and allowed him to kiss her naked hand. "You will return," she said. "I know it! Thousands, if not millions, will see to it that the ban will be lifted. Trimalchio's will open again, and a thousand years of glorious evolution will begin! We shall not rest until the population of the whole world is convert to our cause."

"Thank you, my child," he said.

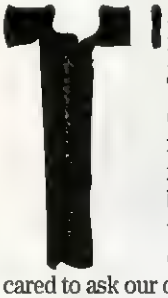
The officers from New Scotland Yard had already arrived by then, but they waited dutifully until Jerome had completed his circuit before they led him away.

I left it until the following Saturday to ask Tamara to marry me. She refused. I had felt fairly sure that she would, just as I had felt fairly sure that she would have accepted if I had been able to seize the more propitious moment. Nothing I could say a week after Jerome's arrest made any difference. When I told her, in frank desperation, that I had booked into a Harley Street sex clinic to have the full treatment—tongue as well as penis—she merely shrugged her shoulders.

"In Mexico," she pointed out, "pioneers are already busy converting the semen of rich Americans into what Jerome called a *nutritive augmentation*. What use are mere playthings when possibilities like that are visible on the horizon? How many times have you heard me argue that marriage is irrelevant in a world like ours, when ectogenesis will soon relieve the womb of its role in the reproductive process, and dietitians will make sure that all children are raised successfully? It's not you, Ben—you know perfectly well that I've turned down others. I love you dearly, even though you are so absurdly old-fashioned—but I couldn't love you half as much if I didn't love the ideals of progress even more."

She was right, according to her own lights. I was old-fashioned, perhaps to the point of quaintness if not absurdity. I still am—and I see nothing wrong with it. Such things are a matter of taste, after all, and the world would surely be a poorer place if we couldn't take some pride in the arbitrary idiosyncrasies and mannerisms that form our individual personalities.

Tamara and I remained good friends, but it was inevitable that we eventually drifted apart. In the end, I married Monica, and I still think that the marriage was reasonably successful, within its limitations. We both grew out of it, but that doesn't mean that it has to be reckoned a failure.



The last meal ever served in Trimalchio's did leave the kind of lasting impression that Jerome had hoped. The antis were outraged when they heard what he'd done, and the tabloids were full of scare stories for months afterward about our having dined on "living food" and "living wine" that would "devour our inner being" as we struggled to digest it, but it wasn't like that at all. The active cells could have been flushed out of our alimentary canals in five minutes if we'd cared to ask our doctors to flush them but, so far as I know, not a single person who was at Trimalchio's that night even went so far as to take advice from a GP. We had faith in Jerome, you see. We trusted him not to harm us, and we were confident that if the active cells—which weren't really any more "alive" than a new set of Marks & Spencer underwear—had any perceptible effect at all, it would definitely be beneficial.

I was always pretty fit, but I think I've been even healthier since I ate that meal. I know there's more of a spring in my step, more zest for life. I'm more confident, too. It's almost as if a weight that I didn't even know I was carrying had been lifted from my shoulders.

All that's a bit vague, I know, but there are some specifics I can point to. I'm no longer allergic to mussels, and I've developed quite a partiality to locusts in bitter chocolate. I've doubled my bench-press record and I've knocked five seconds off my best time for 1,500 kilometers. I'm also becoming far more adventurous. As soon as the divorce settlement has been formalized—assuming that it doesn't prove to be too ruinous—I'm thinking of taking a little trip to Mexico. If fate has decreed that I'm to be a swinging single for the rest of my life, I might as well try to make the most of the opportunities.

If all goes well, the only thing I'll need to make my future happiness complete is for Trimalchio's to re-open. Maybe I haven't been as active in that cause as I ought to have been, but I've never been the zealot type, and I figure that I did my bit simply by taking Tamara to the restaurant. It's rather ironic that if it hadn't been for my botched proposal plan, the movement would lack its most brilliant leading light.

Anyhow, with or without my help, that's bound to happen soon. The old world is already dead; it's merely a matter of waiting for the enemies of progress to admit that it's high time for the new one to begin. □

By Eric T. Baker

Monster hunters face their most dangerous foe of all—big government.

ABOVE: Delta Green: Countdown *imagines a world at war with monsters from a Lovecraftian nightmare.*

THE BEST CAMPAIGN BACKGROUND ON THE MARket is back, as the war to keep the modern world safe from the predations of the Cthulhu mythos continues in *Delta Green: Countdown* from Pagan Publishing.

Source books for *DG* come in two flavors. There are the 100 page *Delta Green Eyes Only* chapbooks that cover a single topic within the mythos like *Delta Green Eyes Only Volume Two: The Fate.* Then there are the full-fledged 400 page monsters full of more information than you could use in a year of your campaign. *Countdown* is one of the latter. The first *DG* book introduced Delta Green, the secret conspiracy inside the U.S. Government to defend America and world from supernatural threats. It also introduced Majestic 12, the official, sanctioned conspiracy inside the U.S. Government that has forged a treaty with the alien Mi-Go and is dedicated to preserving the secret of the aliens' existence.

Countdown takes the battle out of the U.S. and makes it global. The center piece agency of this book is PISCES, the British government's secret agency for fighting the supernatural. Once an ally of Delta Green, PISCES has in recent years seemed to turn against its former allies and perhaps even its own government. PISCES' opposite number is the outlaw terrorist group called the Army of the Third Eye. The Army claims that England has been invaded by creatures from outer space who have the ability to enter the heads and control the minds of human beings. Lovecraft fans will recognize the M.O. of the Insects from Shaggai, the extraterrestrial Shan. Is there a connection between the Shan and PISCES' apparent transformation? Is the Army a dangerous collection of self-mutilating psychopaths, or are they onto a frightening danger to mankind's very survival?

The action in *Countdown* is not confined to England. There is a chapter on GRU SV-8, once the section Soviet Security devoted to supernatural investigations, and now collection of veterans and operatives struggling to continue the fight as their country reshapes itself around them. Their counterpart is the Skoptsi cult, another group of self-mutilators, but these fanatics enact their dark rites in the service of the mythos's gods and have strongholds in both Europe and America.

The current enemies of Delta Green and Majestic 12 are expanded with a chapter on their Caribbean training base, the Outlook Group, and an old Delta Green enemy resurfaces with the chapter on Tiger Transit, a global, covert shipping/smuggling company with ties to the Tcho-Tcho tribesmen, the same Laotian tribesmen whose original suppression led to Delta Green's official disbanding. Phenomen-X, the occult chasing TV show gets a chapter, as do the Keepers of the Faith, a traditionalist society of ghouls living under New York City who are trying to control their younger, wilder brethren. There is a tour of the occult documents in the Smithsonian, new skills, new spells, a bucketful of NPCs, two scenarios, and a longer campaign. One of the scenarios and one of the book's chapters are devoted to the Hastur Mythos, which is a sort of background within the background. It is a place to take the characters when Deep Ones and servants of Shub-Niggurath are becoming too routine.

The two sections I enjoyed most in the book were the Tiger Transit write up and the list of the world's Intelligence Agencies. Tiger Transit was fun because it starts on the chains and knuckles street level where I like to run my characters, and advances to high conspiracy and complete weirdness. The agency list is great because it trumps the list of U.S. Agencies in original book. This list takes 100 pages to catalogue 150 agencies from 38 countries. Each agency is given a brief write up and a sample character. Ever wonder who provides intelligence info

ARRIVAL

an original limited edition lithograph by

Michael Whelan

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for the Kingdom of Spain or the Swiss Confederation? *Countdown* has the answer.

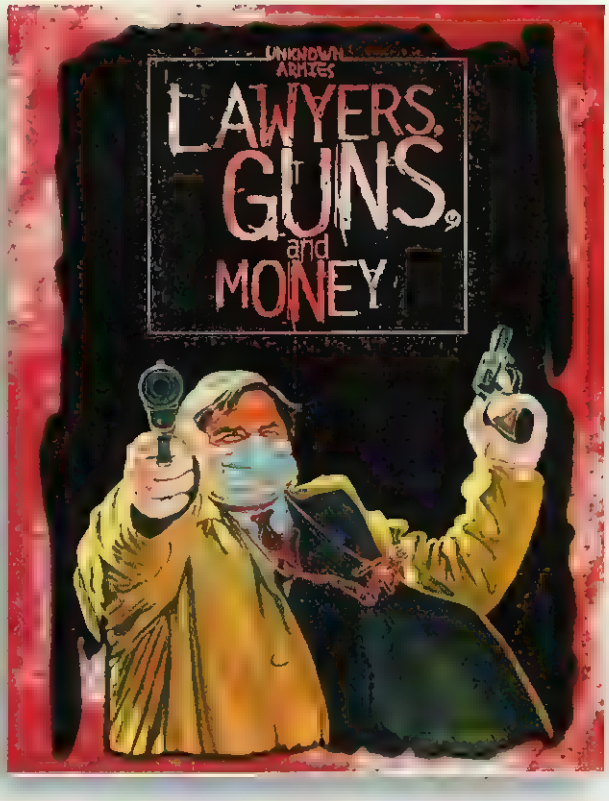
Delta Green: Countdown is how campaign background books should be done. From the opening table of contents to the maps and index in the back, the supplement is just crammed with cool ideas and useful NPCs. It gives game masters what they need to keep their players on their toes and scared out of their wits.

A game world similar and yet very different from *Delta Green* is *Unknown Armies* from Atlas Games. Also set in the modern day, the *UA* background takes a more postmodern look at magic and monsters than does the very Lovecraftian *DG*. The first supplement for *UA* is called *Lawyers, Guns, and Money* and covers the largest cabal in the occult underground: Alex Able's New Inquisition.

In the *UA* mythos, Alex Able is an eccentric millionaire who is obsessed with finding truth behind the *UA* cosmology. He is going about it by buying or stealing every magic artifact he can uncover. Not that he does any actual searching, buying, or stealing himself. Those are jobs for the operatives of The New Inquisition. Able's deal is simple; he gives thieves, murderers, and magic users a chance to start over with a new name, a new face, and a steady job. All he asks in return is that they serve him without question, risk their lives in his cause, and turn all their ill-gotten booty over to him.

Lawyers, Guns, and Money contains the history of TNI, a description of how TNI teams are organized and what they do, how they relate to the other cabals in the *UA* universe, a full chapter on their available magical and mundane gear, twenty pages of sample teams and other TNI NPCs, and a chapter full of secrets that Alex doesn't want anyone to know. In addition, the appendixes add new skills, some good rules for car chases, and two scenarios to run TNI teams through.

Unknown Armies is a hard-boiled background where bad people do bad things to other bad people for bad reasons. Characters tend to be down and out mages or investigators, struggling to get together the resources they need to find the pieces they require to solve the puzzle the GM has given them. Making characters members of TNI gives them access to money and resources that the usual *UA* character would have beg, borrow, and steal to collect. If your players have an aversion to the hard scrabble lifestyle, then *LG&M* and TNI gives you a way to hand them toys in exchange for keeping tight control over what they do with them. If your players are not right for Abel's style of theft and dirty tricks, then TNI makes a good villain for your campaign, and you can still use the book.

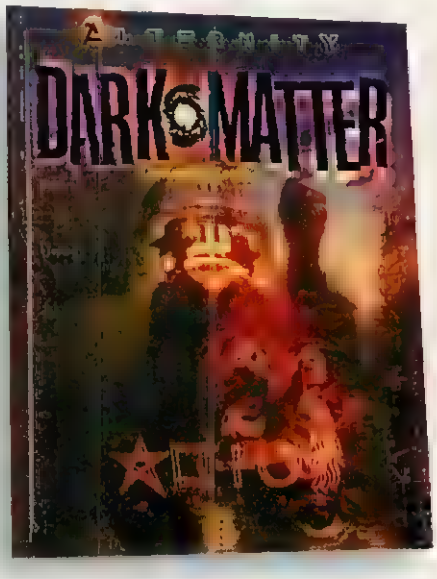


A brand new entry in the "Dark Present" category is *Dark Matter: A Campaign Setting* for *Alternity* from TSR. Like *Delta Green*, *DM* posits a modern day world where the aliens really have landed. Like *Unknown Armies*, *DM* posits a modern day world where conspiracies are real. On the other hand, *DM* does not have either *Delta Green*'s completeness or *Unknown Armies*' originality. If there is such a thing, *Dark Matter* is a straight-ahead conspiracy game. While this cuts down on the number of times GMs will be able to surprise their players, it also cuts down on the amount of background players need to be given before they can sit down to play.

A look through the index and table of contents of *Dark Matter* turns up all the usual suspects in an aliens/conspiracy mythos: Big Foot, Aleister Crowley, the Comte Saint Germain, the Knights of Malta, the Freemasons, the Greys, mothmen, ghouls, and more. If the players have watched a season of *The X-Files* or read a Robert Anton Wilson book, then they will have their feet under them very quickly in this world. The default campaign has them taking the role of investigators for the Hoffman Institute, a private company of ambiguous funding dedicated to investigating the paranormal. This gives the characters a reason to be together, and a place to go for information and resources.

The twist that *Dark Matter* puts on the familiar elements of its background is that in prehistory, the aliens really did land on Earth and continue to do so. The aliens gave humanity access to super science and super magic, knowledge and artifacts that have been largely lost, but not completely. Colonies of Greys and Kinori still exist, and many other "Strangers" have made their way to Earth. *DM* outlines how the presence of these aliens has influenced human history, particularly the history of the various conspiracies that are the backbone of the game's mythos. The magic, science, and travel revealed by the Strangers and adopted by certain humans is powered by a manna called dark matter. The manna crests and ebbs over human history and currently the Earth is experiencing a rising tide of it. Thus the characters enter the game world just as paranormal phenomenon is at its highest point in centuries and still rising.

This background makes sense for a game using TSR's *Alternity* system. After all, the basic *Alternity* books include the possibility of players taking aliens as their characters, a tradition that continues here. And you don't have to look too hard at the *Alternity* aliens standing side by side with the *DM* aliens to see where the future history of a *DM* campaign ends up. All the psychic powers and magic (FX in *Alternity* slang) from the back of the basic rules are available to the characters, as are some new spells, powers, and skills.



The biggest difference between *DM* and *Delta Green* and *Unknown Armies* is the tone. Despite the "Dark" in the title, the tone of *DM* is not one of constant menace or hard scrabble survival. The aliens don't necessarily have humanity's destruction as their goal; some are on humanity's side. Not all the conspiracies are instantly dangerous to anyone who discovers them. Obviously a game master can take a campaign where ever he wants to, but the basic default campaign is one where players have every reason to expect that their characters will live long enough to make sense of the background's mysteries and that

those characters will be powerful enough to make some sort of difference in the world.

Speaking of darkness and making a difference, the latest campaign from White Wolf is now out. *Hunter: The Reckoning* takes the place of *Wraith* in the White Wolf line of games and looks to be an integral part of the "Year of Reckoning" meta-campaign. In what at first blush sounds like a radical departure for a White Wolf game, the characters in *Hunter* are not some flavor of undead beast. The characters are human, and they're out to take the world back from the undead.

If your reaction to that news is to envision muscled-up special forces types with silver bullet loaded machine guns, then you are on the same wave length as the artists who did the interior art for the book. As the introduction says, however, "*Hunter: The Reckoning* is not *Hunters Hunted*, *The Inquisition*, or *Project Twilight Second Edition* (not, in other words, a revision of previous game supplements from White Wolf)." No, if *Hunter* were to be called a remake of a pervious WW game, that game would be *Aberrant*. *Hunter* is a game about normal people suddenly thrust into the role of monster hunters, not about highly trained professionals working as part of some larger conspiracy or agency.

Why would normal people, bankers, housewives, doctors, and garbagemen suddenly give up their average way of life to fight vampires, werewolves, zombies, ghosts, and all their servants? Because, like *Buffy the Vampire Slayer*, they have no choice. All of them have had the experience of doing something simple, mundane—one more chore in their normal lives when suddenly "Bang!" The veil of deceit that hides the monsters from the rest of the world is torn away. The formerly average person becomes one of the Imbued. From that day forward, not only can they see the monsters for what and where they are, but they are also given great powers with which to fight them.

If this were *Champions*, then the Imbued would just accept that they have become superheroes, put on their colorful tights, and hitch hike over to the Tower of Justice to get their duly-deputized card. *Hunter* is a White Wolf game, however, so there is no ready acceptance. With WW, there must be angst, there must be hand wringing, and, above all, there must be clans. *Hunter* has seven: Avengers, Bystanders, Defenders, Judges, Innocents, Martyrs, Redeemers, and Visionaries. These divisions decide both the character's feelings about "The Hunt" for the supernatural, and the power path that the character will pursue. In an interesting departure from other WW games, the Imbued's most combat effective powers are usually the first they learn. This is a necessity since the characters know nothing about the World of Darkness when they are suddenly plunged into it.

Chapter One of *Hunter* is a long piece of fiction from Greg Stolze laying background and setting the tone for the game. The rest of the chapters lay out the world in more detail, walk the players through character generation, detail the powers of the Imbued, lay out the rules of the game, and then tell the Game Master how to run a campaign. The last chapter is the bestiary with write-ups of most of the *World of Darkness*' monsters. These descriptions are interesting since they are written as short oral reports from various Imbued who have faced that kind of monster. There are stats for the GM's eyes only, but what is interesting is reading designers who have been doing these games for years having to step back and describe vampires as if seeing them for the first time.

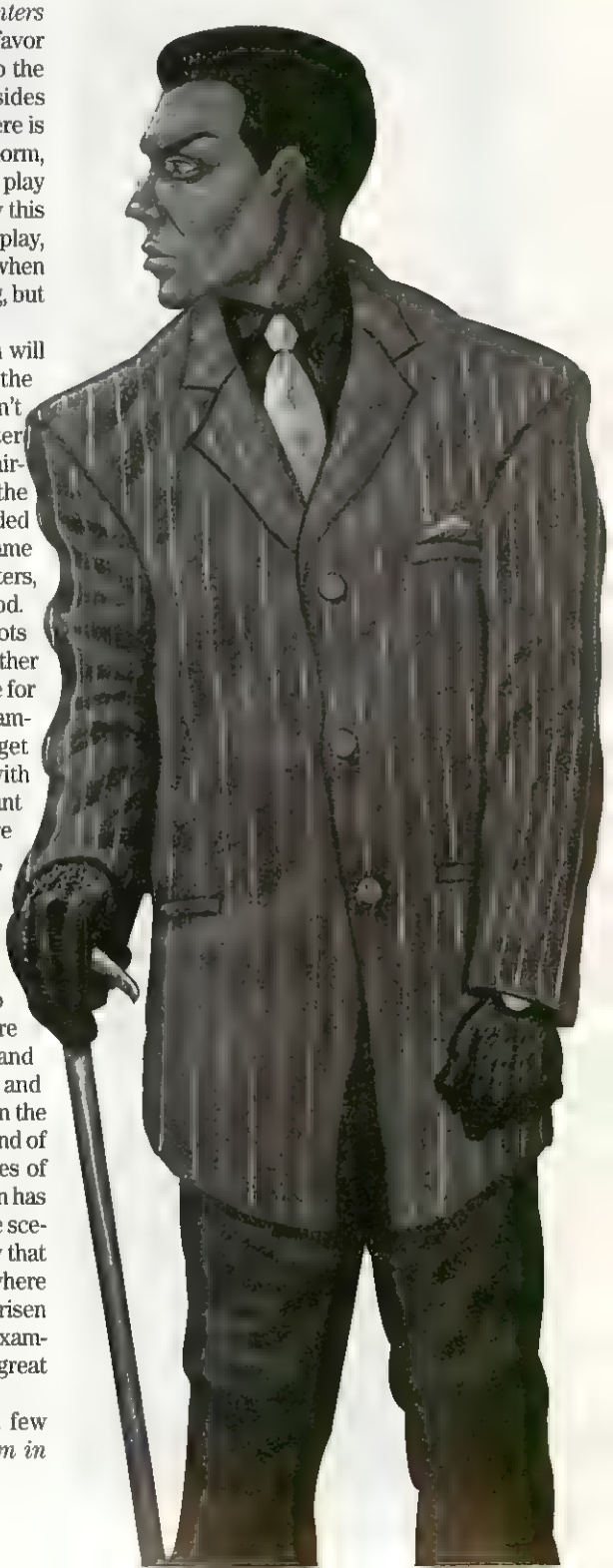
I'm enough of a humanity bigot that I would have liked *Hunter* better it had been *Hunters Hunted: the Second Edition*, but I'm in favor of anything that puts more humans into the World of Darkness as something besides lunch for the monsters. System-wise there is no departure here from the Story Teller norm, so if you enjoy the mechanics and game play of other WW games, then you will enjoy this one too. It is probably worth the time to play, just to see the look on a vampire's face when your character not only sees him coming, but fries him to charcoal with a glance.

By the time you read this, civilization will have (hopefully) survived the turn of the Millennium. Of course, survival doesn't always make for the best stories. Enter *Down in Flames* from BTRC, a set of thirteen stand-alone scenarios set during the end of the world. The scenarios are divided into categories based on how the end came to be: natural disasters, man-made disasters, outside influences, and wrath of (a) god. They are not intended as jumping off spots for new campaigns. They are intended either as one shots for an evening's play, or else for the last hurrah of an already ongoing campaign. Sometimes players and GM's get tired of being careful and thoughtful with the characters. Sometimes they just want to let the character cut loose as if there were no tomorrow. With these scenarios, there is no tomorrow.

Most of the thirteen scenarios provide pregenerated characters. The characters are built using BTRC's Corps system, but they are easily converted to whatever rule system you favor. There are also maps, stats for gear, vehicles, and NPCs. Mostly though, there are ideas and plots to get the evening's game rolling. In the back is a section on creating your own end of the world adventure, including six pages of world maps where the depth of the ocean has been modified. This is an aid both for the scenarios included in the book, and for any that the GM might make. The world maps where the ocean levels have fallen instead of risen create some interesting inland seas, for example, while putting most of the world's great port cities a long way from the water.

If your gaming group is ripe for a few evenings of disaster, then pick up *Down in Flames*. □

OPPOSITE ABOVE: Lawyers, Guns and Money *takes a post-modern look at magic and monsters. OPPOSITE BELOW:* Dark Matter *contains conspiracies that are easy to swallow. BELOW: What the stylish monsters will be wearing in* Lawyers, Guns and Money.



SCIENCE

Continued from page 16

MARIANNE DYSON: In a thousand years, I predict that women will no longer have children. New humans and replacement "parts" (a mixture of the best of biology, engineering, and computer intelligence) will be created using "Bujold uterine replicators."

JACK COHEN: Human bodies will be engineered and bio-engineered in many directions; reproduction taken out of present form, I can't tell where; immense variety among progeny-species of H. sapiens sapiens; and productive interaction with other species, both terrestrial (as in Uplift?) and alien (e.g., Jovian, Europan, extra-solar). And the probable extinction of H. sapiens sapiens....

JOHN CRAMER: The inhabitants of the Third Millennium will look back on the Second Millennium as that primitive time when human evolution was left to random chance, the period before the human genome was taken in hand and subjected to rational design, critical editing, and far-reaching improvements.

GREGORY BENFORD: The human species will have split into several varieties, perhaps able to mate only by special arrangement ... all from engineering our genome.

Several warn of the approaching technological singularity that will make any predictions impossible:

DAVID KRIEGER: If you subscribe to Vinge's theory of a Singularity coming down the pike shortly—a technological black hole so dense that no light can be shed on what lies beyond it—you don't try to prognosticate on any scale beyond a few decades.

JACK COHEN: From general SF sensibilities, expect inventions which are totally unpredictable—we haven't the language. Maybe FTL, or antigrav, but more likely problems we haven't even identified; communication modes we haven't thought of.

MARVIN MINSKY: I'm afraid that A.C. Clarke was right, about predicting more than 50 years ahead. It will seem like magic, in many respects. In any case, once the AI machines pass a certain threshold, they will be able to learn with increasing power and speed. We can make predictions about what might happen then—and many of the great Science Fiction writers have done so. But we cannot predict when those things will happen. However, it seems to me inconceivable that this will take longer than a century or two. There is no way to predict what will happen after that.

And many predict that humans will transcend our bodies:

JOHN BARNES: Personality transfer and artificial telepathy before 2100.

ROBERT SAWYER: I'm becoming increasingly pessimistic about the likelihood of extraterrestrial life—if it exists at all, anywhere in the universe, I suspect it's very rare—but by the end of the next millennium we won't be alone, regardless. Rather, we will have created all sorts of new life forms, including other radically different intelligent beings.

ABOVE: When Artificial Intelligence becomes the norm, as in The Matrix, we best make sure the AI knows who is in charge.

JOE HALDEMAN: The condition of being a human being will change into something that might not even be recognizable as life. Do I know how? Of course not; nobody does, yet. But interim technologies like cryonics and some sort of actual communion between machine intelligence and human intelligence will be steps on the way.

ROBERT FORWARD: As the *next* millennium dawns, it will be greeted by humans in many forms, meat humans with genetically cleaned, near-perfect, sexually reproduced bodies; android humans with fabricated metal/plastic bodies and electronic brains; virtual humans that have no bodies at all but exist inside large electronic networks; and perhaps other forms of humans yet to be imagined. They will all share a common history of the human race, think of themselves as humans, and acknowledge that all the other types are humans. All will have a part to play in the next millennium.

And finally, before we go off believing too much of what we write, maybe we should pay attention to **LAWRENCE WATT EVANS:** I predict that at least 80 percent of all predictions (beyond the utterly banal and obvious) will be wrong, including *all* predictions that the future will be dominated by any one thing, be it computers or bioengineering or capitalism or whatever.

Apocalypse or apotheosis? One thing for sure: The next millennium is going to be interesting. □

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MERCHANT

Continued from page 61

"Keep blood money. I do not want."

Pepper takes the money and sets it on the small table next to the laptop. He looks around the room one last time, shakes his head, wraps his duster back around him, then steps through the door, softly shutting it behind him.

Li sits still for another few minutes, then carefully kisses Mei's forehead and gets up, rubbing at red eyes.

Pepper leaves the laptop, with the small black disk sitting by it, behind.

MEI'S GRAVE is a small one dug by the Macau missionaries. Li is not sure what else to do, and the eager white missionaries are thrilled to preach the good news to an ignorant foreigner. Li ignores them, and sets an elaborate bunch of flowers next to the headstone.

Li isn't stupid. Something grand is happening. The message-senders are closer now. He wonders if the Western scientists have gotten Pepper's data. Someday the messages will stop, and an alien craft will shake the sky, part the clouds, and land in Canton.

Pepper is no longer seen on the wharf docks. And Li no longer sells fish. He has enough money to live well in Macau for the rest of his life. Pepper's gift was generous.

On the deck of a large old ship that stinks of diesel fumes, Li leaves Macau. Another peasant on the deck, another hoping for a new life. He ignores the crates of loud fowl, the grubby smiling kid with the caged cricket, and the old lady who loudly farts on the bench across from him. He braces himself against the heavy sea, letting the salt blow away the fish smell, looking back at the distant shore.

TWO WEEKS LATER, on the shore of a small beach in California, Li tosses a small black disk into the water, careful to not let it prick him, and then drops a single hibiscus in after it.

Li has heard, earlier, that Western scientists are in Canton, the Chinese government finally admitting the existence of its message. Pepper's work is done.

And today in Canton, everyone repeats with wonder, the scientists looked upward at the sky in wonder as a sleek, shining alien craft slowed to a gentle stop between the massive radio dishes.

Maybe they will bring an order to the chaotic world, Li thinks, or change the world in other, fairer ways. He wants to meet the distant entities, and tell them how important his Mei was to their historic event. But for now…

"Farewell, Mei," Li says.

Then he turns to walk back up the beach, smiling at the children screeching and running through the cold surf. □

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are reincarnated in quasi-mortal form upon Earth. There, the solution to the mystery dovetails with a growing romance between the two immortals, culminating in a melancholy but optimistic mode that suddenly justifies the book's title.

Although *Genesis* is an intriguing and seductive read, it exhibits certain defects that are an unavoidable effect of mixing Anderson's humanistic saga-telling tendencies with his Wellsian urges (one last shibboleth!). Basically, Brannock and Ashcroft are hardly onstage long enough for us to invest much empathy in them or their strange far-future love affair. Also, the quick glimpses of intermediary cultures—featuring their own barely sketched personages—are just too frustratingly limited. On the other hand, the development of the galactic mind over millions of years gets scanted also. To truly depict all these multiple evolutions, as Stapledon more convincingly did, would entail a much longer book with no room for focus on mere individuals.

Anderson's world-building and scene-painting abilities—his talent for creating unique environments that adhere to physical constraints and his capacity for crafting sensual word-portraits—remain undimmed, and in the end are the twin buttresses that just barely manage to keep this heartfelt but airy cathedral of stars from falling apart.

Paul Di Filippo

***Oceanspace**, by Allen Steele. Berkley Ace, 384 pages., $21.95 ($30.99 Canada).*

Over the past decade, Allen Steele has produced a steady stream of remarkable Science Fiction at all lengths, from novels to short stories. His earliest novels, considered part of Steele's Near Space series, were set in the early-to-mid-21st-century and chronicled man's early settlement of space, and featured protagonists decidedly more blue-collar than those in typical Hard Science Fiction novels. His first novel outside the Near Space series was *The Jericho Iteration*, a fast-paced thriller set in a near-future St. Louis devastated by an earthquake.

Steele's latest novel, *Oceanspace*, is also a near-future thriller, set primarily under water on the Blake Plateau, hundreds of feet below the surface off the United States' southeastern shore in the Atlantic Ocean. The year is 2011, and the crushing depths of the ocean are finally being opened up to commercial development as well as scientific research.

Yemaya Ocean Resources is one of the first corporations to begin responsible commercial exploitation of ocean resources. Their primary products are deep-sea mineral nodules and samples of the unique microorganisms found only around thermal vents, which are sold to biotechnology companies for their unique DNA. Yemaya has built Tethys, an underwater habitat more than 300 feet deep from which divers and submarines can be launched for deep-sea mining and research.

Oceanspace begins with Joe Niedzwieki, piloting one of Yemaya's one-man submarines, being attacked by a huge snake-like sea monster, which destroys his sub, forcing him to eject and await rescue on the surface. He is rescued by another Yemaya employee, Peter Lipscomb, whose wife, Judith, just happens to be a marine biologist with a hobby of searching for sea monsters. Judith is vacationing in the Dominican Republic with their common mentor, Professor Charles Toussant, also a Yemaya employee. Peter and Judith's 17-year-old niece, Andie Lipscomb, had been invited to visit them, and they all soon meet up at Tethys' surface facility, along with a beautiful reporter named Leslie Sun from the popular *Millennium Magazine* seeking to write a story on Tethys.

Tethys scientists use data indicating the possibility of new thermal vents, with potentially new biota, to acquisition use of a special Yemaya sub capable of taking a five-person team to investigate the area, and make a side-trip to investigate the area where Joe was attacked by the sea monster. Through clever maneuvering, Judith assures that Andie, who has brought her video camera, replaces Leslie on the potentially historic but dangerous mission. During their trip, Judith and Andie get to know each other well for the first time, as they search for sea monsters and hyperthermaphilic microorganisms. Meanwhile, various subplots unfold back at Tethys, the most interesting of which involves an attempt to illegally sell unique thermal vent biota samples to agents of a foreign company.

Allen Steele has been writing superior and original Hard Science Fiction, especially the Near Space series, throughout his career. Most of his work to date, however, has had a characteristic flaw: a tendency toward self-indulgent insertion of cultural references from the early 1970s, which lessen the believability of his characters and milieu. His blue-collar space construction workers in 2019 listened to Grateful Dead music and seemed transplanted from a 1970 college dormitory. In *The Jericho Iteration*, Steele's first near-future thriller, the protagonist works for an underground newspaper that seems transplanted directly from the late 1960s.

The good news is that *Oceanspace* contains virtually no vestiges of this tendency. All of the characters fit reasonably well into their 2011 time frame, and there are no regurgitated, undigested bits of anachronistic culture to be found. It appears that Steele has finally matured as a writer and has grown out of this annoying habit.

It is also clear that Steele has done his homework related to oceanography, marine biology, and deep-sea technology. The novel provides some fascinating glimpses of how man can (and probably will) begin to utilize deep-sea resources in a reasonably safe and responsible manner. The novel also shows that Steele has not lost his ability to write well-paced narratives, a skill at which he has excelled from the very start of his career. Equally important, Steele's characters are just interesting enough to make one care enough about them for the story to remain compelling throughout.

But although *Oceanspace* is a good high-tech thriller, it is not a great one. While the description of modern sea exploration technology is well researched, there is very little new or original here. The most interesting and original ideas in the novel are the sea monster, the mining of deep-sea mineral nodules using robot collectors, and the thermal vent biota, all of which are fully described when they are introduced early in the novel. The climax of the novel contains no surprising new revelations whatsoever gained from the mission to visit the sea monster and the thermal vents. The most satisfying SF novels contain radically original speculative ideas, and the best thrillers feature revelations that force the characters (and readers) to reassess the meaning of much of what was learned earlier. *Oceanspace* falls somewhat short on both of these accounts. It almost seems that as Steele is maturing as a writer, he may be losing a bit of his youthful vigor.

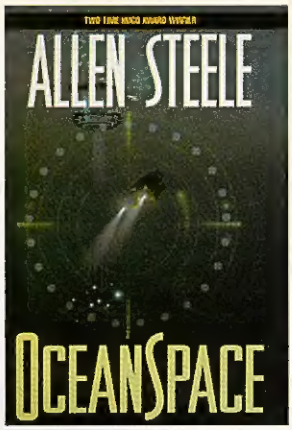
But one really shouldn't complain about a book with so few overt flaws. *Oceanspace* is a very readable book, and one that conveys the same engaging and positive view towards ocean exploration that Steele has conveyed so well in his Near Space stories about space exploration.

***The Naked God**, by Peter F. Hamilton. Warner Aspect, hardcover, 992 pages, $26.95.*

With *The Naked God*, Peter F. Hamilton closes out the incredibly long and equally successful Night's Dark trilogy. Like the preceding volumes, *The Reality Dysfunction* and *The Neutronium Alchemist*, *The Naked God* offers up page upon page of space opera action interwoven with elements of hard SF, Fantasy, and even Horror. In its hardcover form, a shelf-bending tome of nearly a thousand pages, the book certainly has room for all those genres and more besides.

As the novel opens, the 900-world Confederation scrambles to roll back territorial gains made by the possessed, humans occupied by souls of the dead that have escaped from "the

beyond." In a universe of technological marvels, sentient ships, living habitats, and easily accessible nanotech and world-threatening antimatter weapons, these unquiet spirits have shaken humankind in two very significant ways. First, the dead's energistic powers disrupt even the most sophisticated and reliable technology. If that weren't enough to panic a tech-reliant society, the souls' very presence and their fierce determination not to return to the terror that is the beyond raises a number of very unpleasant theological and philosophical questions. And with possessed factions led by the ever-efficient gangster Al Capone and a chaos-loving Satanist intent on destroying the universe, the Confederation will not be afforded time to confront those dangerous, unsettling issues calmly.



When military campaigns against the possessed prove wasteful of both lives and lucre, hope shifts to an alien legend: the Sleeping God of the Tyrathca. In the best space opera tradition, it is left to stalwart starship captain Joshua Calvert and his crew to uncover the secret of this supposedly all-powerful being. With some luck and a dash of old-fashioned common sense, Calvert might be able to turn the secret of the Sleeping God against the conquering souls.

All this may sound relatively straightforward, but readers foolhardy enough to wade into *The Naked God* without having first read at least one of the previous volumes will be even more lost than a possessor without a host body. Hamilton offers new readers no significant narrative platform at the book's start, no quick definitions of series-specific terms, no reminders of characters' histories or the intricacies of their relationships. The volume's page count and the multitude of subplots will all but certainly foil any attempts to fathom the story through context alone.

The sheer length of the book and the astounding barrage of short, fast scenes by which Hamilton tells his tale may also leave readers feeling a bit distanced from the narrative. The characters that populate the trilogy are much more sophisticated than their space opera ancestors, representative of more than the frontline heroes and villains; in their variety, Hamilton does an excellent job portraying the war's effects on all the universe's far-flung corners. But there are just so many people tramping across the stage, so many different backdrops, that some grow insubstantial as they loiter out of the limelight for dozens of pages at a time.

This is a weakness of the epic form, and one to which Hamilton surely falls prey, but not in a fatal way. His lead characters, particularly Joshua Calvert, Louise Kavanagh, and the oozingly evil Dexter Quinn all shine brightly enough to draw your eyes away from their less carefully rendered compatriots. The action scenes are thrilling, the various habitats and worlds inventive. Hamilton uses technology to excellent effect throughout, not just as setting, but as thematic goad. The astounding discoveries that make the Night's Dark universe seem so strange, so unlike our own, also lead the characters back to the very basic questions of identity and faith they thought they had outgrown centuries past.

That same use of hyper-sophisticated technology to direct the human cast back to the most essential of existential quandaries lays the thematic groundwork for the satisfying, yet deceptively simple conclusion to which the Night's Dark trilogy builds. Throughout *The Naked God*, characters strive to achieve connection with each other and their world by shucking off the numbing technological shells they inhabit or, in the case of the possessed, usurping an organic home in the universe. No matter how intricate the tech, Hamilton tells us time and again, there are still essential elements of faith and feeling that identify us as humans. What technology can provide is a nearly infinite variety of ways to express that humanity. Within *The Naked God* and the entire Night's Dark trilogy, Hamilton utilizes the conventions of genre fiction in much the same way, mixing SF, Fantasy, and Horror in surprising, unconventional ways to express his ideas. This genre-bending has met with some harsh criticism, particularly from SF purists, but it is quite fitting given Hamilton's thematic concerns. Just as technology affords the characters within the work many ways to manifest humanity, the trappings of the various genres give an astute storyteller like Hamilton ways to tell a tale of humankind as multifaceted as its subject.

James Lowder

Books To Watch For

Beyond the Stars, by William Shatner (HarperPrism). Television's Captain James T. Kirk delivers another space adventure in the series that has already been optioned by Hollywood. Travel with the super-human Jim Endicott to an alternate universe.

Crescent City Rhapsody, by Kathleen Ann Goonan (Avon). This third book of the Nanotech Quartet continues the tale of a 21st century made unrecognizable by biotechnology. Intriguing and intelligent.

Technohorror: Inventions in Terror, edited by James Frenkel (Roxbury Park/Lowell House). SF/Horror tales have long been around, because better technology is not always a good thing. This short story collection includes tales by Ellison, Bradbury, King, Cadigan, Pohl, and eleven others.

Darker Than You Think, by Jack Williamson (Orb). Without this seminal novel of Horror by a SF Grandmaster, King and Barker would have had nowhere to go. Back in print at last with an introduction by Douglas E. Winter.

The Computers of Star Trek, by Lois H. Gresh and Robert Weinberg (Basic Books). Since the beginning, *Star Trek* has been a mirror to society's feelings about computers and the technology of the future. Examining that history will tell us who we are.

Jumping Off the Planet, by David Gerrold (Tor). The award-winning author and creator of the original *Star Trek* episode "The Trouble With Tribbles" turns his Nebula-nominated novella—originally published in these very pages—into a gripping novel of extraterrestrial espionage.

Cities in Flight, by James Blish (Overlook Press). Follow spacefaring cities around the galaxy in search of a better way of life. An omnibus edition of four classic novels by one of SF's greatest writers.

The Sandman Companion, by Hy Bender (Vertigo Books). Neil Gaiman's comic book series *The Sandman* changed the face of Fantasy. This influential masterpiece is examined through interviews with Gaiman and others, and includes extras such as Gaiman's original proposal.

Rings, by Charles L. Harness (NESFA Press). Born in 1915, Harness is still writing and has been producing exciting SF since 1947. This omnibus collection brings together three classic novels and one new novel to this edition.

Fantastic Tales, by Jack London (Bison Books). Though known now primarily for works of nature such as *The Call of The Wild*, London also wrote weird tales that traverse time and space. With an introduction by Philip Jose Farmer.

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By Cory Doctorow

For a complete archive of this column's four-year run, check out **http://www.craphound.com/nonfic/listing.html#column**, and keep your suggestions coming, to **doctorow@craphound.com**.

Daniel Manus Pinkwater are the three nicest words in Science Fiction. Pinkwater's young adult books are the point of entry to SF for hordes of kids, and they've got the key virtue critical to all kids lit: they're equally entertaining to adults. The *Hoboken Chicken Emergencylopedia* is a Web compendium of all things Pinkwater, at **http://home.earthlink.net/~stoba/hoboken/**.

Jonathan Carroll, the gifted author of *The Land of Laughs*, *Outside the Dog Museum* and, most recently *The Marriage of Sticks* has a wonderful author site at **http://www.jonathancarroll.com/**. From the introduction by Neil Gaiman to the downloadable screenplay adaptations of Carrol's novels, the site has everything an author site should, including some lovely design work. Thanks to David P. Nickle for pointing this one out.

Reader John Robinson wrote to me to tell me about *The Jack Vance Integral Edition*, a fan-run, non-profit initiative to reprint every word penned by Jack Vance, whose career has encompassed dozens of novels published over the last 60-odd years. The *Edition* will run to some 60 volumes, printed in high bibliophilic style: acid-free, hand-stitched, and lovingly restored to Vance's original text, without editorial "improvements." Visit the project at **http://netserver.massmedia.com/~mikeb/vie/** today!

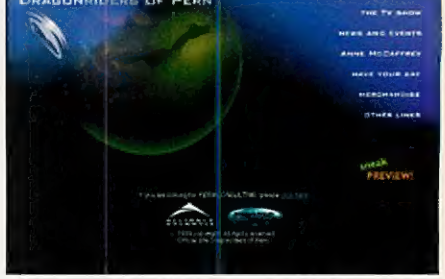
The last in our quartet of author sites for this month is David Read's *Lankhmar* (**http://www.lankhmar.demon.co.uk/**), a wonderful tribute to Fritz Leiber's classic sword-and-sorcery stories. It has capsule descriptions of every book Leiber published, pointers to Leiber's books elsewhere, and essays on the works.

Writing is a waiting-game: Manuscripts can languish in editorial offices for years before an author hears back on their disposition. The *Black Hole* is a collective project spearheaded by author Andrew Burt, which attempts to track average response times for every fiction market in the genre. The dataset is as impressive as the results are depressing: **http://critters.critique.org/critters/blackholes/**.

Now that the shine has worn off of your Christmas presents, you can scratch your consumer itch with a *real*, *functioning lightsaber* from the *Plasma Blade Homepage*. Equipped with realistic reproductions of lightsaber handles, the plasma blades for sale at **http://larbel.amer.net/** won't slice your enemies in two, but they sure look like they could.

While we're on the subject of media-driven SF, have a look at **http://www.dawgnation.com/gadawg95/noromo/quatermass.htm**, a literate, elaborate, and entertaining conspiracy theory about where the *X-Files'* Chris Carter *really* found the series' inspiration. The truth is out there!

Anne McCaffrey fans have their wish: a Pern TV series, with high-end CGI and the author's stamp of approval. See the site at **http://www.pern.com** for all the news that's fit to print, including videoclips of the press conference where Anne herself announced the show, and work-in-progress stills.



Bruce Sterling has done it again! Since the early days of "Bruce Sterling's AgitProp Disk," Chairman Bruce has skated the cutting-edge of what he calls "literary freeware." Now comes Viridian Green, Sterling's deadly serious millennial art-movement bent on stopping global warming through esthetic sensibility. Check out the mailing-list archive at **http://www.bespoke.org/viridian/**. □

the Swampland trilogy

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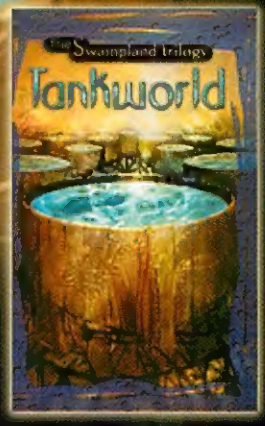

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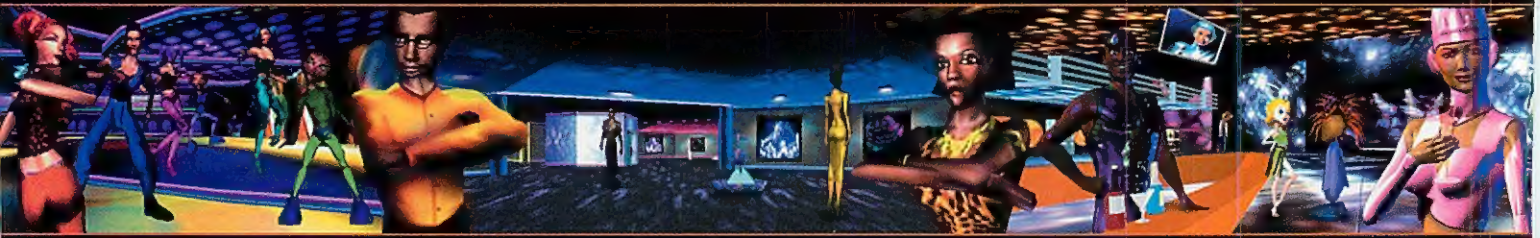

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